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SOME FACTORS AFFECTING THE INCREASED RELATIVE USE OF CURRENCY SINCE 1939*

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I. INTRODUCTION

IN AN EARLIER article[1] the present writer invited the attention of this readership to the greatly increased importance in recent years of currency in circulation as a drain upon the reserves of the banking system. It was pointed out that in its present size and behavior the currency drain quite substantially modifies the ability of commercial banks to expand and contract credit on the basis of fractional reserves, and that, consequently, it has important policy implications. Among the latter we would emphasize the relevance of the marginal ratio of currency to effective money[2] to all measures designed to influence the total supply of effective money. More specifically, since this ratio itself is not subject to control through monetary policy instruments, it must be taken into account as one of the factors which will shape the final monetary results of given changes in the excess reserve position of commercial banks. This being so, the more accurately the marginal currency ratio can be anticipated, the more precisely policy can operate, the monetary authorities achieving desired results with a minimum of purely empirical measures and

* The author gratefully acknowledges his indebtedness to Mr. John S. Evans, who located and gathered some of the published data used in this article; and to Mr. O. P. Wheeler, vice-president, Federal Reserve Bank of San Francisco, and Mr. Homer Jones, chief, Consumer Credit and Finances Section, Division of Research and Statistics, Board of Governors of the Federal Reserve System, who made unpublished data available for use here. The statistical processing of the data and the conclusions drawn are entirely the work and responsibility of the author. This article was written while the author was assistant professor of economics at the University of Texas.

1. Stephen L. McDonald, "The Internal Drain and Bank Credit Expansion," *The Journal of Finance*, Vol. VIII (December, 1953).

2. The ratio of an increment of currency in circulation to an increment of effective money, the latter taken here to be the sum of demand deposits adjusted and currency in circulation outside the Treasury and Federal Reserve Banks.

countermeasures and therefore with a minimum of complicating disturbances in the money markets. The greater the precision of monetary measures, the smaller is the danger that their intended effects will be vitiated through the creation of market uncertainty regarding the nature and magnitude of future measures.

With the hope of contributing to our ability to anticipate the marginal currnecy ratio, we are here presenting statistical evidence which, we believe, illuminates the behavior of the currency drain since 1939. The period selected may be divided into three subperiods (dates inclusive): (*a*) mobilization and war, 1940–45; (*b*) demobilization and readjustment, 1946–50; (*c*) partial mobilization and limited war, 1951–53. The last period ends with 1953, rather than 1954, in order to make it comparable on a small scale with the 1940–45 period and to minimize possible effects of the 1953–54 recession. Lacking monthly data in most cases and suitable indexes of seasonal variation to correct monthly data, we rely upon annual data applying to the year end. This procedure obviously blurs the demarcation of logical periods, such as the outbreak of the Korean war in June, 1950, and the beginning of the recession in the middle of 1953, but it seems superior to ignoring the very wide seasonal swings in the relevant data.

Table 1 provides the statistical description of our problem. We wish to understand why the ratio of currency to effective money rose from 20.3 per cent in 1939 to 27.4 per cent in 1944, receded to 23.1 per cent in 1950, and remained substantially unchanged through 1953;[3] why, despite higher money and real incomes, further deruralization of population and unequaled security of deposited funds, the currency ratio has never returned to its prewar level, much less the low levels attained in the latter 1920's. Although the answers to these questions will not necessarily apply to other periods and situations, they may increase our familiarity with factors relevant to the problem.

II. The Personal Currency Ratio

It is first necessary to note (see Table 2) that the variations in the currency ratio which we wish to explain are responsibly attributed to personal holders of currency. According to Federal Reserve estimates, business establishments held 28.5 per cent of total business and personal holdings of currency in 1939, while personal

3. The *marginal* currency ratio, which alone is pertinent to an anticipation, obviously underwent violent swings during the period 1939–50, and was nearly constant during 1950–53.

holdings accounted for 71.5 per cent. In 1945, these proportions were, respectively, 18.2 per cent and 81.8 per cent, at which levels, approximately, they have since remained. Business-held currency is found to be a nearly constant percentage of business-held effective money, 11.5 per cent, over the entire period, 1939–53; but the ratio

TABLE 1

COMPOSITION OF THE "MONEY SUPPLY," UNITED STATES SELECTED YEARS, 1914–53
(billions of dollars)

(1) Year (Dec. 31)	(2) Demand Deposits Adjusted*	(3) Currency in Circulation†	(4) "Effective" Money" (2) and (3)	(5) "Currency Ratio" Total Percentage (3) Is of (4)
1914.....	10.1	3.0	13.1	22.9
1918.....	14.8	5.0	19.8	25.3
1921.....	17.1	4.4	21.5	20.5
1924.....	20.9	4.8	25.7	18.7
1925.....	22.3	4.8	27.1	17.7
1926.....	21.7	4.8	26.5	18.1
1927.....	22.7	4.7	27.4	17.2
1928.....	23.1	4.7	27.8	16.9
1929.....	22.8	4.6	27.4	16.8
1933.....	15.0	5.5	20.5	26.8
1936.....	25.5	6.5	32.0	20.3
1939.....	29.8	7.6	37.4	20.3
1940.....	34.9	8.7	43.6	20.0
1941.....	39.0	11.2	50.2	22.3
1942.....	48.9	15.4	64.3	24.0
1943.....	60.8	20.4	81.2	25.1
1944.....	66.9	25.3	92.2	27.4
1945.....	75.8	28.5	104.4	27.3
1946.....	83.3	29.0	112.3	25.8
1947.....	87.1	28.9	116.0	24.9
1948.....	85.5	28.2	113.7	24.8
1949.....	85.8	27.6	113.4	24.3
1950.....	92.3	27.7	120.0	23.1
1951.....	98.2	29.2	127.4	22.9
1952.....	99.4	30.2	129.6	23.3
1953.....	102.4	30.8	133.2	23.1

* Demand deposits adjusted = gross demand deposits less interbank deposits, U.S. Government deposits, and items in process of collection.

† Outside the Treasury and Federal Reserve Banks.

Source: Compiled from Board of Governors of the Federal Reserve System, *Banking and Monetary Statistics* and *Federal Reserve Bulletin*. Data for the years 1914–52 previously published in McDonald, *op. cit.*, p. 408.

of personal currency to personal effective money (hereinafter the "personal currency ratio") rose from 32.0 per cent in 1939 to 43.4 per cent in 1945, then declined to 37.6 per cent and 37.8 per cent in 1950 and 1953 respectively.[4] The personal currency ratio is then

4. The variability of the personal currency ratio is probably exaggerated by the procedure of estimating other holdings of currency, sometimes by rule-of-thumb formula, and deriving personal holdings as a residual. See Board of Governors, *Derivation of Liquid Asset Distribution Estimates* (Mimeographed), R&S-1147, Revised July, 1954.

both higher and more variable than the aggregate currency ratio as given in Table 1. We note further that the business and personal ratios of currency to liquid assets behaved in a pattern of opposite movements, the latter ratio rising from 8.9 per cent to 14.6 per cent, 1939–53, then falling to a roughly intermediate level in 1950 and 1953. These movements parallel the variations of the personal currency ratio. In still another measure of the relative importance of

TABLE 2

ESTIMATED CURRENCY AND OTHER LIQUID ASSET HOLDINGS OF MAJOR GROUPS, SELECTED YEARS, 1930–53
(billions of dollars)

	End of Year			
	1939	1945	1950	1953
1. *Total Business and Personal Holdings**				
2. Currency	5.6	24.7	23.5	25.8
3. Demand deposits†	21.0	60.7	67.3	73.6
4. Total liquid assets‡	65.6	213.6	225.0	248.9
5. *Business Holdings*				
6. Currency	1.6	4.5	4.7	5.2
7. Demand deposits	12.5	34.4	36.1	39.7
8. Total liquid assets	19.5	73.8	71.0	78.0
9. Business currency as percentage of total currency held	28.5	18.2	20.0	20.1
10. Business currency as percentage of business effective money	11.3	11.5	11.5	11.5
11. Business currency as percentage of business liquid assets	8.2	6.0	6.6	6.6
12. Business currency as percentage of personal disposal income	2.2	2.9	2.2	2.0
13. *Personal Holdings*				
14. Currency	4.0	20.2	18.8	20.6
15. Demand deposits	8.5	26.3	31.2	33.9
16. Total liquid assets†	44.9	138.2	152.4	169.3
17. Personal currency as percentage of total currency held	71.5	81.8	80.0	79.9
18. Personal currency as percentage of personal effective money	32.0	43.4	37.6	37.8
19. Personal currency as percentage of personal liquid assets	8.9	14.6	12.3	12.1
20. Personal currency as percentage of personal disposable income	5.6	13.4	9.1	8.2
21. *Vault Cash of Insured Commercial Banks*	1.1	1.8	2.1	2.5
22. Vault cash as percentage of business and personal demand deposits	5.6	3.0	3.2	3.5
23. *Currency Held by Foreigners*	0.4	0.8	0.9	1.0
24. Foreign-held currency as percentage of currency in circulation	5.3	2.8	3.2	3.2

* Holdings of banks, insurance companies, savings and loan associations, non-profit associations, foreigners, and governmental bodies and agencies not included.

† As per depositor record, not bank record.

‡ Liquid assets of trust funds not included. "Total liquid assets" includes currency, demand deposits, time deposits, savings and loan shares, and government securities.

Source: Business and personal holdings derived from "Estimated Liquid Asset Holdings of Individuals and Businesses," *Federal Reserve Bulletin* (July, 1954); vault cash of insured commercial banks, *Federal Reserve Bulletin;* currency held by foreigners, Board of Governors, *Derivation of Liquid Asset Distribution Estimates* (Mimeographed), R&S-1147, Revised July, 1954, p. 15 (quoted by permission).

currency, the ratio of currency to personal disposable income, we find the value in the personal sector to show great variation in the now familiar pattern of up sharply, 1939–45, down moderately, 1945–50 and 1950–53. The business ratio of currency to personal disposable income faintly reflects the pattern of variation in the personal ratio. Finally, it is notable that the fluctuations in the currency ratio which we wish to explain are in no degree attributable to vault cash of commercial banks or to foreign holdings of United States currency.

Leaving aside all but personal holdings, then, we observe a consistent pattern in changes in importance of currency relative to demand deposits, liquid assets, and personal disposable income. Variations in non-personal holdings reflect in a logical way the movements of personal holdings. Accordingly, we are led to inquire why *personal income receivers* in the aggregate should have found it in their interest to increase the relative use of currency during World War II, and to decrease it thereafter by a smaller amount.

III. An Estimate of Regional Changes in Personal Income and Circulating Currency

In the hope that such a comparison might be suggestive of hypotheses regarding our problem, we related estimated changes in personal income payments to estimated changes in circulating currency, by Federal Reserve districts, during the three subperiods selected. The results are shown in Table 3. It is important to say immediately that no great reliance is placed upon these findings as such. Their chief purpose is to suggest further steps with more reliable measures, and the major portion of their significance is derived from the findings of such further investigations. However, we do believe, for reasons which will presently become apparent, that the findings reported in Table 3 add some weight to our final conclusions.

The estimates of personal income payments by Federal Reserve district are made by the present writer from Department of Commerce estimates of income payments by states.[5] Since Federal Reserve districts do not conform strictly to state borders, the procedure necessitates a division of some state figures between adjacent districts. The method employed is arbitrary. Lacking more useful guides, we equally divided state income figures between the appropriate Federal Reserve districts where it appears that the geographical area of the state is nearly equally divided between districts

5. *Survey of Current Business* (August, various years).

TABLE 3

COMPARISON OF PERCENTAGE CHANGES IN INCOME PAYMENTS AND PERCENTAGE CHANGES IN FEDERAL RESERVE NOTES IN CIRCULATION BY REGIONS, SELECTED PERIODS, 1939–53

	% Change 1939–45				% Change 1945–50				% Change 1950–53			
	I.P.*		F.R.N.†			I.P.		F.R.N.		I.P.		F.R.N.
District	%	R‡	%	R	District	%	R	%	R	District	%	R	%	R
Atlanta	183.2	1	831.3	1	Dallas	47.2	1	9.5	2	San Francisco	30.3	1	6.5	9
San Francisco	176.0	2	725.6	2	Minneapolis	46.3	2	10.7	1	Atlanta	27.2	2	3.6	11
Dallas	157.3	3	687.5	3	Chicago	44.3	3	4.7	5.5	Cleveland	26.1	3	11.3	1
Kansas City	156.6	4	505.6	5	Kansas City	39.8	4	4.4	7	Dallas	25.4	4	7.2	7
Richmond	138.3	5	660.9	4	Cleveland	39.6	5	4.7	5.5	Minneapolis	25.0	5	3.2	12
Minneapolis	122.9	6	300.0	11	Philadelphia	39.2	6	5.5	4	Chicago	24.8	6	9.4	3
St. Louis	122.2	7	463.2	6	St. Louis	38.6	7	6.5	3	Philadelphia	23.6	7	9.8	2
Chicago	118.4	8	313.0	10	Richmond	36.9	8	− 2.9	10	Richmond	22.3	8	8.8	4
Cleveland	108.7	9	358.7	8	N.Y.C.	36.7	9	1.7	8	St. Louis	22.1	9	7.0	8
Philadelphia	99.0	10	360.6	7	San Francisco	35.3	10	−23.0	12	Boston	21.6	10	8.7	5
Boston	92.7	11	263.4	12	Atlanta	32.0	11	− 8.1	11	N.Y.C.	20.7	11	7.6	6
N.Y.C.	86.8	12	326.0	9	Boston	31.8	12	0.7	9	Kansas City	20.6	12	4.2	10
Coefficient of rank correlation = .82 (Highly significant)					Coefficient of rank correlation = .81 (Highly significant)					Coefficient of rank correlation = − .09 (Not significant)				

* Income Payments
† Federal Reserve Notes
‡ Rank

Source: Income payments, *Survey of Current Business;* Federal Reserve notes in circulation, *Federal Reserve Bulletin.*

(e.g., Louisiana, Mississippi, Tennessee). Where a relatively small portion of a state is included in a district (e.g., the small segment of Oklahoma in District 11 and the lower tip of Indiana in District 8), the entire state income figure is assigned to the district in which the geographical bulk of the state lies. It is believed that when percentage changes in income payments by district are calculated the error introduced by this procedure is insignificant.

The estimates of percentage changes in Federal Reserve notes by district are subject to different sorts of errors, and they are probably larger. First, of course, Federal Reserve notes do not constitute the entire circulating currency and there may be variation in their relative importance from district to district.[6] However, nearly all the increase in currency over the period under study took the form of Federal Reserve notes, so we believe the error of this type to be small. The second type of error stems from interdistrict migration of notes. To a certain extent this is offsetting, and net interdistrict migration was limited during the period by the practice of returning fit "foreign" notes to the district bank of issue.[7] Finally, there is the error stemming from the movement of notes outside the country. The importance of this consideration obviously varies from district to district.

With these cautions in mind, let us look at the findings. When we rank the several districts by percentage change in income payments and by percentage change in Federal Reserve notes in circulation, we obtain significant degrees of rank correlation in the periods 1939–45 and 1945–50. There is no apparent rank correlation for 1950–53. Three of the districts (Atlanta, San Francisco, and Richmond) in the first five income ranks during 1939–45 are to be found in the lowest five ranks 1945–50; Atlanta and San Francisco, which ranked 1 and 2 respectively 1939–45, rank 2 and 1 respectively 1950–53. This may suggest unusual dependence of these districts upon war-related incomes. In the period 1939–45, five of the top six ranks were held by districts embracing states characterized by below-average family and per capita incomes, relatively heavy reliance upon agriculture, and the presence of racial and cultural groups with low propensities to use checking accounts. Five of the six low-ranking districts in 1939–45 are characterized by above-average incomes, dense population, and urban-industrial economies. In short, a marked regional redistribution of income favoring the

6. Some states in the West, for instance, may demand and use more silver certificates and coins than others for purely local reasons.

7. The practice was ended in July, 1954.

low-income, high-currency using areas is apparent. The pattern is mixed, not reversed, 1945–50, so one may readily see that the relative gains of the poorer districts in the first period are not lost in the second. Since increases in Federal Reserve notes correlate well with changes in district incomes, one would expect net gains in the relative use of currency over the period 1939–50, a sharp gain with the pronounced redistribution of income from 1939 to 1945, a modest loss with the only partial reversal of this redistribution from 1945 to 1950.

A rather obvious exception to this pattern of regional redistribution is provided by the San Francisco district. The district comprises states having above-average levels of income payments. On grounds of income levels, then, one would not expect the marked fluctuation in circulating notes observed. However, the pattern of variation *does* correspond to that of military wage and salary payments. Direct investigation[8] of this relationship yields results which seem to confirm the proposition that the great variability of note circulation of the San Francisco Bank, 1939–53, is chiefly due to that Bank's responsibility for providing currency and coin to military disbursing officers within the district, Alaska, Hawaii, and the Pacific theater of military operations. These facts would seem to explain, for instance, the 23 per cent decrease in San Francisco Bank notes, 1945–50, while most other Reserve Banks increased their circulation. Moreover, the argument is consistent with the behavior of the note circulation of the Reserve Banks on the East Coast, five in number, which shared among themselves the total burden of military disbursements in the Atlantic and Caribbean areas.

We are not at all enlightened by the results of our rank correlation analysis for the years 1950–53. There is no apparent repetition of the pattern of regional income changes during 1939–45; and there is no signifiicant correlation between changes in income payments and circulating Federal Reserve notes. Given the brevity of the period and the grossness of our measures, it would not be profitable to ponder possible reasons, but this difference in results should be borne in mind as we form and test hypotheses suggested by the experience of 1939–50.

8. In response to the author's inquiry by mail, Mr. O. P. Wheeler, vice-president, Federal Reserve Bank of San Francisco, very graciously made an extended reply, providing unpublished statistical data and considered opinions concerning the note circulation of that Bank.

IV. The Role of Military Wages and Salaries

We have seen that some of the regional changes in income payments and circulating currency seem to be related to war and reconversion. In addition, there are logical grounds for supposing that the relative use of currency is affected by the relative importance of military wages and salaries in total income payments. Military personnel typically have below-average money incomes per income-receiver, their residence is highly impermanent, their consumption expenditures are heavily weighted with the type of purchase (e.g., food, beverages, entertainment) customarily effected with currency, and they are frequently stationed abroad or aboard ship, where banking facilities are not readily available.

As a preliminary test, we related percentage increases in Federal Reserve notes in circulation to percentage increases in total income payments attributable to military wages and salaries,[9] by districts, 1940–1944.[10] This analysis yields a coefficient of rank correlation of .74, which is statistically significant. With this supporting evidence, we then proceeded to correlate the personal currency ratio[11] with military wages and salaries as a percentage of total personal income. In this analysis we use national totals, which are not subject to the errors and qualifications of regional data, and we drop our three subperiods to examine the year-by-year relationship over the whole period, 1939–53. The graphic results are shown in Figure 1.

Note first the high degree of curvilinear correlation.[12] Taken at its face value, the index of correlation of .88 means that during the period about 77 per cent of the variation in the personal currency ratio is "explained" by variation in the military wages and salaries to personal income ratio. Although we are aware of the dangers of imputing causation from correlation, we believe that logical reasoning and the evidence of the rank correlation analyses warrant the assertion that very probably most of the variation in the currency ratio is attributable to variations in the relative importance of military wages and salaries.

9. "Military wages and salaries" include allotments, family allowances, and mustering-out pay. Data from *Survey of Current Business* (August, 1945).

10. Unfortunately, comparable data for other years are not available. In subsequent years, this category of payments is lumped with other government payments.

11. See definition above, p. 315.

12. The "fit" would be almost as good in the case of a straight line. For extrapolation, a straight line would be superior.

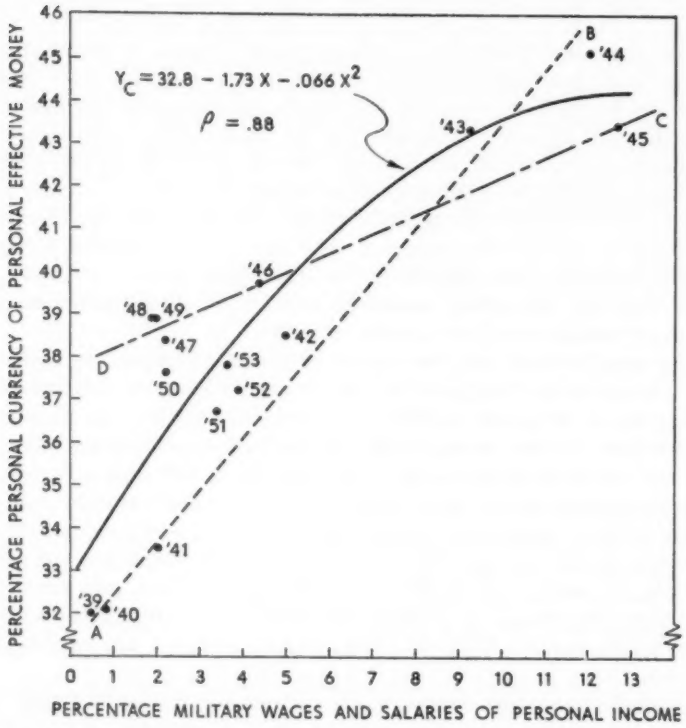

FIG. 1.—Regression of currency ratio on relative importance of military wages and salaries.

Year	Percentage Military Wages and Salaries to Personal Income	Personal Currency Ratio	Year	Percentage Military Wages and Salaries to Personal Income	Personal Currency Ratio
1939	0.5	32.0	1947	2.2	38.4
1940	0.8	32.1	1948	1.9	38.9
1941	2.0	33.5	1949	2.0	38.9
1942	5.0	38.5	1950	2.2	37.6
1943	9.3	43.3	1951	3.4	36.7
1944	12.1	45.1	1952	3.9	37.2
1945	12.7	43.4	1953	3.6	37.8
1946	4.4	39.7			

Source: Ratio of military wages and salaries to personal income, U.S. Department of Commerce, *National Income, 1954 Edition, A Supplement to the Survey of Current Business;* ratio of personally held currency to personal effective money, "Estimated Liquid Asset Holdings of Individuals and Businesses," *Federal Reserve Bulletin* (July, 1954).

But another noteworthy feature of Figure 1 is the pattern of deviation of the year-to-year relationships from the fitted curve. The movement from 1939 through 1944 (line *AB*) is most pronounced and nearly linear; from 1945 through 1949 (line *CD*), the movement of relationship is also approximately linear, but the decline is less steep than the previous rise; and from 1950 through 1953, there is no consistent relationship apparent. A possible implication is that during the period 1939–44 one or more factors other than military wages and salaries acted to increase the personal currency ratio, while during 1945–49 the force of a declining ratio of mili-

TABLE 4

PERCENTAGE SHARE OF FAMILY PERSONAL INCOME BY QUINTILES 1935–36 TO 1953

	Percentage Share before Federal Income Taxes						Percentage Share after Taxes	
Quintile	1935–36	1941	1944	1947	1950	1953	1950	1953
Lowest	4.1	4.1	4.9	5.0	4.8	5.0	5.1	5.4
Second	9.2	9.5	10.9	11.0	10.9	11.3	11.4	12.0
Third	14.1	15.3	16.2	16.0	16.1	16.5	16.8	17.2
Fourth	20.9	22.3	22.2	22.0	22.1	22.3	22.7	22.8
Highest	50.7	48.8	45.8	46.0	46.1	44.8	44.0	42.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Top 5 per cent	26.5	24.0	20.7	20.9	21.4	20.7	19.2	18.2

* "Family personal income" is confined to families and unattached individuals composing the civilian non-institutional population. It is net of social security contributions, but includes imputed items.

Source: Years 1935–36 through 1947, Selma Goldsmith and others, "Size Distribution of Income since the Mid-Thirties," *The Review of Economics and Statistics* (February, 1954), p. 9; years 1950 through 1953, U.S. Department of Commerce, *Income Distribution in the U.S., 1950–53*, p. 8. The data are fully comparable.

tary wages and salaries to personal income was not thus assisted in forcing down the personal currency ratio. From 1950 through 1953, opposing forces seem to have been at work. Accordingly, we turn to a second hypothesis suggested by the preliminary rank correlation analysis: that income redistribution acted to change the personal currency ratio.

V. The Role of Income Redistribution

Table 4 shows changes in the size distribution of family personal income in the United States since 1935–36. There is a notable redistribution downward between 1935–36 and 1944, with little or no change thereafter through 1953. All of this redistribution is at the expense of the highest quintile, the relative gains being distributed among the lower four quintiles in inverse proportion, so that inequalities among all quintiles are reduced. Although the effect of the federal income tax is further equalizing, it is important to note

that this factor is by no means predominant among those affecting the distribution of income.

Now the logical effect of downward redistribution, per se, is to increase the relative use of currency. The basis for such a statement is amply provided in Table 5, which shows the relationship between income and ownership of checking accounts in two recent years.[13] However, the redistribution of which we speak was accomplished through differential *increases* in the mean real incomes of *all* quintiles, only the mean real income of the top 5 per cent being slightly reduced.[14] The redistributive effect was thus opposed by

TABLE 5

PERCENTAGE OF SPENDING UNITS HAVING CHECKING ACCOUNTS BY INCOME GROUPS, 1946 AND 1947

ANNUAL MONEY INCOME BEFORE TAXES	PERCENTAGE HAVING CHECKING ACCOUNTS		PERCENTAGE OF SPENDING UNITS IN EACH INCOME CLASS
	1946	1947	1947
Under $1,000	21	21	8.4
$1,000–$1,999	29	30	16.5
2,000– 2,999	28	30	18.9
3,000– 3,999	42	39	19.3
4,000– 4,999	50	56	12.8
5,000– 7,499	67	72	14.8
7,500 and over	88	89	9.3
Average	34	37	Total 100.0

Source: *Federal Reserve Bulletin* (July, 1947)

the upgrading effect, the latter logically tending to decrease the relative use of currency. Data are not available to enable a usable estimate of the net effect.[15]

But in assessing the effect of income redistribution downward we must consider factors other than mere changes in percentage shares. As previously noted, the size redistribution of income during 1939–44 in part reflects a regional redistribution, the areas gaining relatively being characterized not only by low incomes but also by the prevalence of rural residence and racial and cultural groups which have a high propensity to use currency. In addition, for the country as a whole, there was an occupational redistribution of income favoring wage earners and, especially, farmers. Thus, between 1935–

13. Comparable data are not available for other years.

14. Selma Goldsmith and others, "Size Distribution of Income since the Mid-Thirties," *The Review of Economics and Statistics* (February, 1954), p. 26.

15. Such an estimate would require distributions of real income, with proportions of total income received by income class, and comparable distributions of checking accounts by real income class for each of the years involved.

36 and 1947, the mean family income of non-farm families rose 136 per cent, while that of farm families increased 269 per cent.[16] Add to this the fact that some six million persons net, not including inductees into the armed forces, migrated from farm to city during this period,[17] possibly retaining their currency-using habits for a time, despite higher incomes, and we have further reason to believe that the observed downward redistribution of income increased the relative use of currency.

An aspect of this last point deserves further emphasis. It seems logically tenable that when family incomes are rising there should be a time lag between successive increases and full adjustment to the patterns of money-using behavior made feasible by those increases. We might postulate that the rapidity of adjustment in the aggregate is a function of change of residence[18] associated with rise of income, inertia of habit and custom, the rate of increase in income, and the extent to which income receivers regard their improved condition (and residence) to be permanent. If this is so, then a rapid rise in incomes, accompanied by redistribution of the sort under discussion, would result in a greater relative use of currency. A succeeding period of slowly rising incomes, with little or no redistribution, should witness a decline in the relative use of currency as lagged adjustments in money-using habits are made.

In view of these considerations, we feel justified in combining redistributive effects with those of variations in the relative importance of military wages and salaries. Since statistical measures of the former are inadequate in number to permit a multiple correlation analysis, we shall rely upon a simple consistency table (see Table 6). The results, which are self-explanatory, show a high degree of consistency between the hypothetical combined effects of these two variables and the actual behavior of the personal currency ratio.[19] In addition (if the reader will refer once again to Figure 1) our hypothesis concerning lagged adjustments to changing incomes is consistent with the declines in the currency ratio of

16. Goldsmith and others, *op. cit.*, p. 12.

17. U.S. Department of Agriculture, *Agricultural Statistics* (1949), p. 575.

18. By "change of residence" we mean movements as between urban, suburban, and rural areas, not mere change of building.

19. It is very interesting to note (see Table 1) that while the aggregate currency ratio was steadily declining to record low levels, 1924–29, income was being redistributed *upward*. In 1929, when the currency ratio was 16.8 per cent, income was more unequally distributed than at any time in this century. See Simon Kuznets, *Shares of Upper Income Groups in Income and Savings* (National Bureau of Economic Research, Inc., 1953), p. 33.

1944–45 and 1949–51. In the former period, the rise in incomes associated with World War II slackened and came to an end; in the latter, the effects of recovery from recession and partial remobilization have not yet had time to show themselves, a point further emphasized by the steep rise in the currency ratio, 1951–53, despite a virtually constant ratio of military wages and salaries to personal incomes.[20]

VI. Conclusion

With regard to variations in the currency ratio, we would reconstruct the period in question as follows. With mobilization and war, 1939–45, three major factors acted to increase the relative use of currency: a rise in the relative importance of military wages and salaries, a regional, occupational, and size redistribution of income and a time lag in the readjustment of money-using habits to conform to new levels of income. This last factor was especially marked due to the very rapid rise in incomes at all levels. With the slackening in the rate of increase in incomes during and after 1944, the currency ratio dropped somewhat, despite the continued rise in the relative importance of military wages and salaries through 1945. From 1945 through 1949 the overwhelmingly dominant factor was the declining importance of military wages and salaries. There may have been some further (lagged) adjustment to rising incomes, though for the period as a whole such increase was modest. There was no systematic redistribution of incomes by size or region. Ac-

TABLE 6

Logical Consistency of Changes in the Ratio of Military Wages and Salaries to Personal Income, Personal Income Distribution and Currency Ratio, 1935–36 through 1953
(changes in percentage points)

Period*	Change in Military Wages and Salaries Ratio	Logical Effect on Currency Ratio	Change in Income Share of Top Quintile	Logical Effect on Currency Ratio	Change in Currency Ratio
1939–44.....	11.6				13.1
1935–36–1944..		Strongly positive	−4.9	Positive	
1944–50.....	−9.9	Strongly negative	0.3	Neutral	−7.5
1950–53.....	1.4	Slightly positive	−1.3	Slightly positive	0.2

* The first two periods are modified slightly (by making the terminal and initial years 1944 instead of 1945) in order to improve their comparability with periods for which income distribution data are available.

20. These considerations with regard to income distribution lead us to believe that the probable "true" relationship between the relative importance of military wages and salaries and the personal currency ratio is more accurately described, as to slope, by line *CD* of Figure 1 than by either line *AB* or the fitted curve.

cordingly, the currency ratio declined, but by not so much as it rose in the previous period. With the outbreak of the Korean war, military wages and salaries rose in importance, and there was some redistribution downward; but lagged readjustment to previous income changes delayed the appearance of upward movements in the currency ratio until after 1951 when the latter increased smartly in the face of a relatively constant ratio of military wages and salaries to personal income.

Our explanation has omitted such factors as bank service charges, tax evasion, black marketing, changes in retail marketing methods, and the opposing trends of deruralization and suburbanization. We do not mean to deny their relevance. Rather, in so far as we can find any evidence relative to these matters, their effects seem to be insignificant in comparison to those of the factors we have emphasized. We can find no consistent measurable relationships between them and the currency ratio.

Our hypotheses and supporting statistical evidence seem to "explain" the significant movements of the currency ratio since 1939. Nonetheless, we doubt that our measurements have more than rough predictive usefulness. For one thing, the era itself is not repeatable, and the same numerical values in different historical circumstances would yield quite different results. We only hope to have attracted attention to two or three factors which have affected, and to some degree will affect, the relative use of currency in the United States; and in this way to have made it seem worth while, in this day of comprehensive income measurements, for our monetary authorities to try to predict the marginal currency ratio.

A GRAPHIC ANALYSIS OF THE THEORY OF THE DETERMINATION OF THE MONEY SUPPLY

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IT IS REALLY quite surprising that an explanation of the determination of the money supply has never been given graphically, considering the apparent preference of so many economists for this means of exposition. The purpose of this paper is to present such a graphic analysis.

The total money supply (M) is, by definition, equal to the sum of the demand deposits held by the public at commercial banks (D) and coin and currency in circulation (C).

$$M \equiv D+C \tag{1}$$

Also by definition the actual reserves of the commercial banks (AR) are equal to their required reserves (RR) plus their excess reserves (ER).

$$AR \equiv RR+ER \tag{2}$$

It will be assumed that all banks have the same reserve requirement. (r_1) will be this percentage of their demand deposit liabilities which they must keep as reserves.

$$RR = r_1 D \tag{3}$$

It will further be assumed that the commercial banks hold no excess reserves.

$$ER = 0 \tag{4}$$

Therefore:

$$AR = r_1 D \tag{5}$$

The banks will be assumed to keep some constant fraction (r_2) of their demand deposit liabilities (D) in the form of coin and currency in their vaults (T).

$$T = r_2 D \tag{6}$$

Adding equations (5) and (6), we obtain:

$$AR+T = (r_1+r_2)\, D \tag{7}$$

The public will be assumed to hold a constant percentage of the money supply in the form of demand deposits. Let (k_1) represent this fraction. (k_1) can be called, for want of a better term, the marginal (and average) propensity to hold demand deposits.

$$D = k_1 M \tag{8}$$

If we solve equations (1) and (8) simultaneously for (C) we obtain:

$$C = (1 - k_1) M \tag{9}$$

Finally, the following relationship is also needed. (AR) plus (T) and (C) is equal to the monetary gold stock plus Federal Reserve credit and Treasury currency less Treasury holdings of cash and deposits at the Federal Reserve and foreign deposits at the Federal Reserve.[1] We will assume that at any given time the algebraic sum of the monetary gold stock, Federal Reserve credit, Treasury currency and Treasury holdings of cash and deposits at the Federal Reserve as well as foreign deposits at the Federal Reserve is equal to a constant (k_2). This gives us:

$$(AR+T) + C = k_2 \tag{10}$$

In Figure 1 we plot on the horizontal axis to the right of the origin the sum of (AR) and (T) and to the left of the origin (M). On the vertical axis we plot (D) above the origin and (C) below the origin. In the first quadrant equation (7) is presented, in the second quadrant equation (8), in quadrant III equation (9) and finally in the fourth quadrant, equation (10).

Given the shapes and positions of the four functions in the diagram, the sum of vault cash and actual reserves is equal to a, demand deposits are equal to b, the money supply is equal to c, and coin and currency in circulation is equal to d.[2] This can be shown in the following manner. When c is the money supply, d is the coin and currency in circulation. When d is the coin and currency in cir-

1. For an excellent discussion of this relationship see: Lester V. Chandler, *The Economics of Money and Banking*, revised edition (New York: Harpers' Bros., 1953), pp. 205–15.

2. Solve simultaneously equations (7) through (10) for (M), to obtain:

$$M = \frac{k_2}{1 + k_1 (r_1 + r_2) - k_1}.$$

An obvious advantage of the geometric solution over the algebraic is that we can see at a glance the equilibrium values of not only (M) but (C), (D), and (R) plus (T) as well.

culation we learn from the fourth quadrant that a is the sum of actual reserves and vault cash. But we see from quadrant (I) that when a is the sum of actual reserves and vault cash b is the level of demand deposits, but when demand deposits are b the money supply is c. We are thus back where we started. If we begin this process at any other point, either to the right or left of c we would

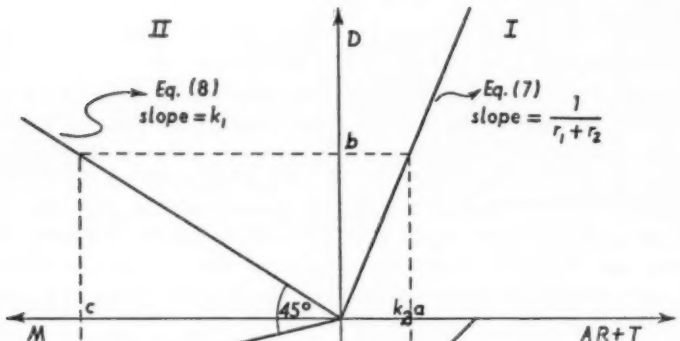

FIG. 1

contradict ourselves, i.e., we would begin by assuming that the money supply was at some level and then discover that this leads to the conclusion that the money supply is at some other level.

Any change in the shape or position of either of these four functions in the diagram will lead to a change in the values of the variables. The reader can prove this for himself by first making such a change and then finding the new solution. Any change in the relationship of demand deposits to the sum of the actual reserves and vault cash of the commercial banks will shift the line in the first quadrant. If, e.g., the reserve requirement (r_1) were to be increased,

the slope of the line would decrease and the money supply would decline.

If the public should decide to change the proportions it holds of coin and currency and demand deposits, i.e., change their marginal propensity to hold demand deposits, the lines in the second and third quadrants would shift. If, e.g., the marginal propensity to hold demand deposits were to rise, the slope of the line in the second quadrant would increase, while the slope of the line in the third quadrant would decrease by the same amount. Given such a shift one can easily find the new equilibrium solution and will discover, of course, that the money supply has increased.

The line in the fourth quadrant, which is merely the graphic representation of equation (10), is based, as pointed out above, on the assumption that the algebraic sum of the monetary gold stock, Federal Reserve credit, Treasury currency, Treasury holdings of cash and deposits at the Federal Reserve, and foreign deposits at the Federal Reserve is constant. If the monetary gold stock, Federal Reserve credit or Treasury currency were to increase (decrease) the line in the fourth quadrant would shift away from (toward) the origin. If Treasury holdings of cash and deposits at the Federal Reserve were to increase (decrease) the line would shift toward (away from) the origin and the money supply would decrease (increase). In each case the distance between where the new line intersects the vertical and horizontal axes and where it previously did so is equal to the change in the item.

It is possible now to show with reference to the diagram how the various means of monetary control affect the money supply. Changes in reserve requirements and moral suasion (in so far as it is used to encourage the banks to hold or eliminate excess reserves) are both means of shifting the line in the first quadrant and thus affecting the money supply. Changes in the rediscount rate, the bill-buying rate, open-market operations, and moral suasion (in so far as it is used to encourage the commercial banks to borrow or discourage them from borrowing from the Federal Reserve) are all means of shifting the line in the fourth quadrant, by changing the amount of Federal Reserve credit. Open-market purchases, e.g., cause the line to shift away from the origin and thus tend to increase the money supply.

THE CREDIT EXPANSION EQUATIONS OF AN INDIVIDUAL BANK*

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WHEN ALL the varied economic forces that determine the power of an individual bank to increase or decrease the supply of money are taken into account, it can be shown that this power depends primarily on the trading relations between the bank and its depositors and the rest of the world economy rather than primarily on the lending activity of the individual bank relative to that of other banks. In this paper I propose to express this relationship systematically and to relate the model with which I will work to the classical model of C. A. Phillips.[1]

I. ASSUMPTIONS

Generalizations about economic phenomena must be made in the context of the social habits that circumscribe the decisions of the individuals who generate the phenomena. These habits are ordinarily stated as assumptions; mine will be as follows:

A. That there is a well-developed system of commercial banks, legally empowered to accept only demand deposits. These banks cannot hold deposits with each other nor do they exchange goods, services, or securities.[2]

B. That there is a central bank with general powers of regulation and control over these commercial banks. The commercial banks must hold reserves in the form of deposits with the central bank. Among the powers of the central bank is that of prescribing the legal reserve ratio (r).[3] It can also buy and sell government securities on the open market and lend to commercial banks. All coin and currency, whatever their source, are issued through the central bank to the commercial banks and through the commercial banks to the public.

* The views expressed in this article are my personal opinions and do not necessarily reflect those of the Federal Reserve Bank of Chicago. I would like to express my appreciation to Prof. Earl J. Hamilton for a general appraisal of its content as the manuscript approached its final form.

1. Chester Arthur Phillips, *Bank Credit* (New York: Macmillan Company, 1920), chap. iii, pp. 32–76.

2. The assumption that banks do not deal with one another simplifies the exposition without rendering the argument less exact. Terms expressing interbank transactions can be readily added to the equations developed later.

3. Throughout this paper I will assume that the reserve ratio is constant.

C. That there are units of government with the power to borrow, to collect taxes, and to expend the funds so acquired. These units of government must hold all funds on account with the central bank.[4]

D. That all private households and businesses, which I will refer to collectively as "firms," make payments either in cash or by transferring the ownership of demand deposits held at the commercial banks.[5]

E. That all checks are cleared through the central bank.

Within this framework, the legal limit to the maximum amount of demand deposits that the commercial banks can carry as liabilities will depend only on the volume of their reserve accounts at the central bank and the legal reserve ratio. This proposition will hold for all commercial banks collectively and for each individual bank. That is, any bank can legally hold demand deposit liabilities equal to the amount of its reserve account at the central bank divided by the reserve ratio. A bank cannot, however, depend on its reserves remaining constant; consequently, if, at a point in time, a bank has a given volume of excess reserves, it cannot, as a practical matter, be asserted that the bank will necessarily be able to increase its demand deposit liabilities by the amount of excess reserves divided by the reserve ratio. To determine the practical limitations on the power of an individual bank to expand credit, it is necessary to analyze the economic processes that occasion changes in the volume of its reserves.

II. A Classification of Debits and Credits

I shall develop my analysis by way of classification of debits and credits to the reserve accounts of the individual bank (to be referred to as "Bank i") and to the demand accounts of firms (to be referred to as "depositor firms") that hold deposits with it. Some depositor firms will hold all their demand deposits at Bank i, but some will hold accounts at other banks as well. The basis of the classification will be the economic process (class of transaction) underlying each debit or credit.

A. Transactions between government and banks or firms

Government can pay banks and firms for goods and services, make transfer payments and tax refunds to them, and repay debt owed them either on or before maturity. Such payments made to Bank i will result in credits (g') to its reserve account. Payments made to depositor

4. This, too, is a simplifying assumption. When a governmental unit holds funds at commercial banks as the federal government does in its tax and loan accounts, the equations developed later require a term to express the arbitrary deposit and withdrawals of government.

5. I also assume that payment is never made by indorsement of checks. If this phenomenon were to be taken into account, it would have to be as a new component in B_k (see p. 337).

firms will result either in credits (G') to their accounts at Bank i or in credits (G'_o) to their accounts at other banks.

Banks and firms can pay taxes, fees, assessments, etc., to government or lend to it by purchasing securities. Payments made by Bank i will result in debits (g) to its reserve account. Payments by depositor firms will result either in debits (G) to their accounts at Bank i or in debits (G_o) to their accounts at other banks.

B. TRANSACTIONS BETWEEN THE CENTRAL BANK AND BANKS OR FIRMS

Bank i can deposit cash with the central bank, receiving credits (k') to its reserve account, or withdraw cash, receiving debits (k).

The central bank can pay Bank i for goods, services and, in particular, securities by credits (c'_1) to its reserve account. If Bank i buys goods, services, or securities from the central bank, its reserve account will be debited (c_1). The central bank can also lend to Bank i. The amount of such loans will also be credited (c'_2) to the reserve account of Bank i. Repayment will result in debits (c_2) to Bank i's reserve account.

The central bank can pay depositor firms for goods, services, and securities. Payments will result either in credits (C') to their accounts at Bank i or in credits (C'_o) to their accounts at other banks. On the other hand, payments made to the central bank for goods, services, and securities will lead either to debits (C) to the accounts of depositor firms at Bank i or to debits (C_o) to their accounts at other banks.

C. TRANSACTIONS BETWEEN COMMERCIAL BANKS AND FIRMS

Firms can deposit cash with Bank i and receive credits (K') to their accounts or withdraw cash and receive debits (K).

Bank i can pay firms for goods and services. These payments will result in credits (L_1) to the accounts of depositor firms (a) if payment is made by direct entry on the books of Bank i, or (b) if it is made by a check on Bank i which is deposited there. Payments made by check on Bank i and deposited at other banks will result, on clearing, in debits against the reserve account of Bank i. This latter component of purchases may be broken down into (a) checks cleared through other banks by depositor firms (i_{i1}) and (b) checks so cleared by non-depositor firms (i_1).

Firms can also pay Bank i for goods and services. If depositor firms do so by checks on Bank i, their accounts will be debited (R_1); if by checks on other banks, there will ensue neither debit nor credit on the books of Bank i, but a clearing credit (e_{i1}) to its reserve account. Payments by non-depositor firms will also result in clearing credits (e_1).

Purchases of goods and services from depositor firms by other banks will on payment lead either to credits (e_i) to the firm's accounts at Bank i or to credits (e_o) to their accounts at other banks. Payment for purchases made by depositor firms from other banks bring about debits either to their accounts at Bank i (i_i) or to their accounts at other banks (i_o).

Although the payments described above represent an expansion or contraction of deposit money, none of them represents an extension of credit or a repayment of debt. These latter properly arise when a bank either lends to a firm—i.e., accepts the (new) debt of the firm in return for a demand deposit or a check on itself—or purchases from it the debt of other firms or of government, thus in effect monetizing this old debt. Both of these processes may be thought of as purchases of securities. Their principal distinguishing feature is, of course, the fact that repayment of the old debt will be made by some firm other than the firm selling it to the bank.

To express these transactions, a set of definitions analogous to those which define the exchange of goods and services between banks and firms can be developed. Bank i can make loans which result either in (*a*) credits to the accounts of firms with itself (L_2) or (*b*) credits to the accounts of depositor firms at other banks (i_{t2}) or (*c*) credits to the accounts of non-depositor firms (i_2) at other banks. Repayment of loans to Bank i will result either in (*a*) debits to accounts of depositor firms at Bank i (R_2) or (*b*) debits to the accounts of depositor firms at other banks (e_{t2}) or (*c*) debits to the accounts of non-depositor firms (e_2).

The proceeds of loans of other banks made to depositor firms will either be deposited in Bank i, resulting in credits (e_{si}) to their accounts there, or in other banks, including the lending bank, resulting in credits there (e_{so}). Repayment will be either by check on Bank i (i_{si}) or on another bank (i_{so}).

D. TRANSACTIONS BETWEEN FIRMS

Depositor firms can buy goods and services from non-depositor firms. Payments made by depositor firms will result either in debits (I_i) to their accounts at Bank i or in debits (I_o) to their accounts at other banks. Payments received for goods and services sold to non-depositor firms by depositor firms will result in credits (E_i) to their accounts when deposited at Bank i, and in credits (E_o) when deposited in other banks.

Depositor firms can also make and receive payments on financial account to non-depositor firms. These include payment for securities and equities, payment of interest and dividends, and repayment of

debt. These payments can be described by the symbols I_{si}, I_{so}, E_{si}, and E_{so} with definitions analogous to those in the paragraph above.

Payments for goods and services or on financial account among depositor firms will effect the deposits and reserves of Bank i only to the extent that they are effected by transfers of funds from other banks to Bank i (e_{i3}) or from Bank i to other banks (i_{i3}).

E. TRANSACTIONS INVOLVING THE ARBITRARY TRANSFER BY FIRMS OF FUNDS FROM ONE DEPOSITORY TO ANOTHER

These transactions involve two different processes:

1. Firms that did not hold deposits at Bank i can transfer funds from other banks. These, of course, increase deposits at Bank i by credits (e_{i4}) to the new accounts. Firms, which held deposits at Bank i prior to the transfer can transfer their full deposit to other banks. Their accounts at Bank i will accordingly be debited (i_{i4}).

2. Depositor firms can transfer funds back and forth between Bank i and other banks. The resulting debits and credits may be identified as i_{i5} and e_{i5}.

III. The Individual Bank Credit Expansion Equations

By application of the foregoing classification, several questions can be answered.

A. At the end of some specified period of time, what will be the net change (ΔR_b) in the reserves of Bank i arising out of its transactions with the government, the central bank, and with non-depositor firms?

Eq. 1
$$\Delta R_b = (g' - g) + (k' - k) + (c' - c) + (e_1 - i_1) + (e_2 - i_2)$$

B. What will be the net change (ΔR_i) in the reserves of Bank i arising because firms have arbitrarily transfered funds?

Eq. 2
$$\Delta R_i = (e_{i1} - i_{i1}) + (e_{i2} - i_{i2}) + (e_{i3} - i_{i3}) + (e_{i4} - i_{i4}) + (e_{i5} - i_{i5})$$

C. What will be the net change (ΔR_f) in the reserves of Bank i arising out of transactions of depositor firms with government, the central bank, with other banks and with other firms?

Eq. 3
$$\Delta R_f = (G' - G) + (C' - C) + (e_i - i_i) + (e_{si} - e_{si}) + (E_i - I_i) + (E_{si} - I_{si})$$

D. What will be the total net change (ΔR_i) in the reserves of Bank i? I shall refer to ΔR_i as the "clearing balance."

Eq. 4 $$\Delta R_i = \Delta R_b + \Delta R_t + \Delta R_f$$

E. At the end of some specified period of time, what will be the net change (ΔD_i) in the deposits of firms at Bank i?

Eq. 5 $$\Delta D_i = \Delta R_t + \Delta R_f + (K' - K) + (L_1 - R_1) + (L_2 - R_2)$$

F. At the end of some period, what will be the net change (ΔX_i) in the excess reserves of Bank i?

Eq. 6 $$\Delta X_i = \Delta R_i - r\Delta D_i .$$

IV. The Clearing Balance and the Balance of Payments

On the basis of the preceeding discussion, it is possible to establish the proximate determinants of the clearing balance, (ΔR_i), of the individual bank, Bank i, by relating it to the balance of payments of the bank itself and its depositors, considered as a micro-economy, with the rest of the world economy. In order to make such a comparison, it is necessary to distinguish between that part (B_d) of this balance of payments which involves the transfer of demand deposits and that part (B_k) which involves the transfer of cash.

A. B_d is equal to all transfers of demand deposits between Bank i and its depositor firms, on the one hand, and government, the central bank, and the remaining banks and firms of the economy, on the other, with the exception of the arbitrary transfers of funds defined by ΔR_t.

Eq. 7 $$B_d = \Delta R_b + \Delta R_f - (k' - k) + [(G'_o - G_o) + (C'_o - C_o) + (e_o - i_o) + (e_{so} - i_{so}) + (E_o - I_o) + (E_{so} - I_{so})]$$

If the term of Eq. 7 in brackets is identified as B_o and it is remembered that $\Delta R_i - \Delta R_t = \Delta R_b + \Delta R_f$, ΔR_i can be redefined as:

Eq. 8 $$\Delta R_i = B_d - B_o + (k' - k) + \Delta R_t$$

B. The relationship between ΔR_i and B_k cannot be expressed as directly as that between ΔR_i and B_d, but it can be expressed briefly by saying that $(k' - k)$ is a function of B_k, of the cash inventory policies of Bank i and its depositor firms, and of the extent to which depositor firms use the facilities of Bank i in preference to those of other banks.

The terms $(k' - k)$ and $(K' - K)$ represent respectively net flows of cash between the central bank and the commercial banks and between the commercial banks and firms. The first term measures a change in reserves but not in deposits, and the second a change in deposits but not in reserves. The two flows, however, are linked through the vault cash holdings of Bank i. As a consequence of these two facts, the determinants of $(k' - k)$ are:

1. *The vault cash policy of Bank i.*—Like any inventory, vault cash may be permitted to increase or decrease within limits set at the discretion of Bank i.

2. *Payments made or received in cash by Bank i.*—Although minor in importance, these will create pressure either to replenish a net decrease or to ship a net increase to the central bank.

3. *Adjustments $(K' - K)$ in the supply of cash that firms wish to possess.*—When all firms are considered together, their net deposits or withdrawals of cash are usually considered to represent either (a) changes in the ratio of cash to deposit money that they wish to hold[6] or (b) adjustments initiated in response to changes in the quantity of deposit money and intended to restore this ratio to its desired value. When the depositors of an individual bank are considered, however, another factor enters the scene. When they transfer more cash to other firms than they receive from them, they will be moved to replenish their supply. When they receive more cash than they disburse, they will tend to deposit it. Gains or loans of cash by depositor firms thus reflect the movement of the cash balance of payments (B_k); but cash flows in and out of Bank i $(K' - K)$ are functions as well of the firms' decisions to deal with Bank i or with other banks.

The causal chain linking the cash balance of payments (B_k) with the individual bank's net deposits $(k' - k)$ of cash with the central bank is thus continuous but the dollar value of the two will not necessarily be identical.

It follows that the proximate determinants of ΔR_i are summed up in four right-hand terms of Eq. 8. It also follows that the balance of payments of the individual bank and its depositor firms, their cash inventory policies, and the division of depositor firms' patronage between the individual bank and its competitors are the determinants of the individual bank's clearing position. If some other factor, such as an expansion of credit by the bank, is to be assigned causal significance, it must be shown that this factor influences one of the four terms of Eq. 8.

6. This ratio expresses a rule defining the inventory policy of firms with respect to cash.

V. Phillips' Theory Reconsidered

The exposition of the process of credit expansion implicit in the individual bank credit expansion equations differs from the classic theory originated by C. A. Phillips in 1920. Phillips' original presentation has been interpreted and expanded by other authors. In 1933 Angell and Ficek wrote what is perhaps the most elegant and certainly the most closely argued of these elaborations.[7] Their articles still serve as the prototype for the simplified expositions found in modern textbooks,[8] and they conveniently itemize the majority of their assumptions. Since other treatments are less precise, I shall consider theirs to be representative of the Phillips school.

In order to simplify the argument, Angell and Ficek assume that the economy is self-contained,[9] that there is no central bank,[10] and that coin and currency held as vault cash are the sole reserves of commercial banks.[11] In such a banking system, banks will lose reserves only when they must pay out cash over the counter or when they must meet an adverse clearing balance. They will gain reserves only when cash is deposited or the clearing balance is favorable. To make a predictive statement about an individual bank's ability to extend credit on the basis of a given increment to reserves, it is necessary to make assumptions concerning the sign, magnitude, and origin of these changes in reserves.

Angell and Ficek assume that the community wants to hold cash in a fixed ratio to (available) demand deposits[12] and that consequently an increase in demand deposits will bring about a drain of cash into circulation until the ratio is restored to its constant value. An individual bank, they argue, will share in this loss in the proportion that its demand deposits bear to total demand deposits before the expansion of credit.[13]

7. James W. Angell and Karel F. Ficek, "The Expansion of Bank Credit," *Journal of Political Economy*, XLI, Nos. 1, 2 (February and April, 1933), 1–32 and 152–93. See also J. S. Lawrence, "Borrowed Reserves and Bank Expansion," *Quarterly Journal of Economics*, XLII, No. 4 (August, 1928), 593–626, and W. F. Crick, "The Genesis of Bank Deposits," *Economica* (July, 1927), pp. 191–202.

8. See, for example, Albert Gailord Hart, *Money, Debt and Economic Activity* (New York: Prentice-Hall, 1953), 2d Ed., pp. 64–79; and Paul A. Samuelson, *Economics: An Introductory Analysis* (New York: McGraw-Hill, 1951), 2d Ed., pp. 326–38.

9. Angell and Ficek, *op. cit.*, p. 2.

10. *Ibid.*, p. 3.

11. *Ibid.*

12. Angell and Ficek take into account the possibility that a banker may require a borrower to hold a minimum balance in his account. Such demand deposits are not part of the effective money supply, and Angell and Ficek choose to exclude them from the cash money-deposit money ratio (*ibid.*, pp. 2–3).

13. *Ibid.*, pp. 2, 5–6.

In analyzing the clearing balance Angell and Ficek do not make a sufficient set of assumptions. When they are discussing the expansion of credit by a single bank, they assume that borrowers will shortly check out the full amount of any loan[14] and that each bank will receive a share of the new money proportional to the ratio of its demand deposits to total system demand deposits, both measured before the expansion.[15]

With reference to simultaneous expansion of credit by more than one bank, they write:

> If only certain banks expand, while others lag behind or do not expand at all, those which run ahead of the average will encounter adverse clearing balances, while those which lag behind will accumulate surplus reserves. The first set of banks will thus eventually be compelled, by the loss of reserves, to adjust downward to the average rate of expansion, while the second set will have a strong incentive to expand more rapidly because of the opportunity for increased profit. . . .
>
> Yet, though a credit expansion, once started, thus tends to be universal and uniform, of course no bank can be compelled to increase its loans if it does not wish to do so.[16]

From this quotation it is clear that Angell and Ficek assume the clearing balance of any bank varies with the ratio of the rate of credit expansion of that bank to the rate of credit expansion of all other banks. The clearing balance is adverse when this ratio exceeds unity and favorable when the ratio is less than unity. When the ratio equals unity, the clearing balance equals zero. Since both numerator and denominator of the ratio are rates at which banks are extending new loans, it follows that Angell and Ficek consider the clearing balance to be the difference between debits and credits resulting from the circulation of new money alone. Moreover, in view of their assumption that credits are distributed according to bank size—the base used to compute the rates of increase—it follows that debits, too, must be proportional to bank size. Otherwise, if all banks were expanding at the same rate, the clearing loss of each would not be zero.

But in addition to deposits created by new loans, measured after some arbitrary date, banks will have demand deposits already in existence. Holders of these old deposits will certainly draw on them and add to them in the day-to-day conduct of their businesses or households. Angell and Ficek neglect the activity of this large segment of deposits, the volume of which far exceeds that of new loans made during any reasonably short period of time. By default, they thus assume that the

14. Except, of course, for any sum the banker requires to be held on deposit as a condition for granting the loan.

15. Angell and Ficek, *op. cit.*, p. 4.

16. *Ibid.*, p. 18.

clearing balance of all banks on account of demand deposits already in existence is zero. This proposition, together with the assumption that checks written on any bank are distributed among all banks in proportion to bank size, requires that debits to the old accounts of all banks be proportional to deposits. The proof follows:

Let x_1 be debits to accounts, other than those created by new loans, of any Bank i after some fixed date.

x_2 be debits to the accounts, other than those created by new loans, of all other banks after the same fixed date.

d_1 be deposts of Bank i prior to any expansion of credit.

d_2 be deposits of other banks prior to any expansion of credit. Credits (c_1) to the old accounts of Bank i will be

Eq. 9 $$c_1 = \frac{(x_1 + x_2)\, d_1}{d_1 + d_2}$$

On the other hand debits to the old accounts of Bank i will bear some proportion (p_1) to its deposits; and debits to the old accounts of the other banks will bear some proportion (p_2) to their deposits and all debits ($x = x_1 + x_2$) will bear some proportion (p) to all deposits ($d = d_1 + d_2$)

Whence

Eq. 10 $$x_1 = p_1 d_1$$

And

Eq. 11 $$x_2 = p_2 d_2$$

Eq. 12 $$x = pd$$

By substitution in Eq. 9

Eq. 13 $$c_1 = \frac{(p_1 d_1 + p_2 d_2)\, d_1}{d_1 + d_2}$$

If the clearing-house balance of Bank i on already existing accounts is zero, credits to the old accounts of its depositors must equal debits to them.

Eq. 14 $$\frac{(p_1 d_1 + p_2 d_2)\, d_1}{d_1 + d_2} = p_1 d_1$$

Equation 14 will hold only if $p_1 = p_2$; and, if it is true for any bank, it is true for all banks. Thus, the Phillips model of the process of credit expansion implies that debits to old accounts are proportional to deposits. However, it does not require that they bear any particular proportion to deposits.

This model may be considered from several points of view. First of all, it is undoubtedly intended to be the analysis of the effect of a marginal increment to the reserves of an individual bank. As such it is formally correct within the framework of its structural assumptions and the postulated functional relationships between new loans and reserve losses. The model, however, has been widely interpreted in secondary literature and popular discussion as a relatively accurate description of the process of credit expansion as it actually takes place. This is particularly true of the statement that banks must contract credit together once the process is started and expand credit together unless some banks choose to hold non-earning assets in the form of excess reserves. It seems to me that such an extension of the Phillips model errs in the identification of a simplified and rigid model with a much more complex and volatile set of facts. Rather than criticize the misinterpretation of Phillips' marginal analysis, however, I would prefer to discuss some of the problems which are usually explained in terms of the Phillips model in terms of the individual bank credit expansion equations.

VI. Some Implications of the Credit Expansion Equations

At some point in time (t) an individual bank may hold a certain volume of excess reserves (X). Can this bank expand the volume of its demand deposits to the legal maximum $\Delta D_i = X/r$? Any bank is an integral part of its economic environment and whether it will hold its present volume of reserves or find them increasing or decreasing will depend on all the economic events summed up in Eq. 8. Since the only terms of ΔR_i that directly involve the extension of credit by the individual bank are $(e_2 - i_2)$ and $(e_{t2} - i_{t2})$ and the only term that directly involves the extension of credit by other banks is $(e_{si} - i_{si})$ it follows that the individual bank can gain or lose reserves whether or not it or other banks change the volume of credit outstanding. This possibility indicates that the credit creation potential of an individual bank is subject to influences other than its own decision to lend or not to lend. Banks are an important segment of the economic structure, but banking activity and other economic activity are interacting forces. If, however, the individual bank is not solely responsible for its clearing position, neither is it completely at the mercy of non-banking decisions. To determine the extent of its control, it is necessary to examine the terms of ΔR_i as expressed in Eq. 8.

The possible avenues by which the activities of banks can influence the clearing balance of an individual bank are five in number.

1. *Bank loans to firms.*—The direct effects of the loans of an indi-

vidual bank on its clearing balance depend on the partition of its new loans into the three components L_1, i_2, and i_{t2}. Immediate reserve losses will not occur on that portion (L_1) which appears as entries on the bank's books without first clearing through another bank. Loans made to firms which already hold working accounts at the bank are most likely to fall in this category—a fact which perhaps furnishes the pragmatic background to the maxim of practical banking to the effect that "a bank ought to be able to serve (lend to) its customers (depositors)." Any bank could, of course, refuse to lend except by direct credit on its books, but it could probably enforce such a policy only at the expense of foregoing a certain number of sound profit opportunities.

Repayment of loans to the individual bank (R_2, e_2 and e_{t2}) follow a pattern established by the terms of the loans which were set by the individual bank in a separate bargain with each borrower. The individual bank thus exerts a forward control over their timing, but it cannot control their division into the three components of which only two—namely, repayments from other banks (e_2 and e_{t2})—result in immediate clearing gains. However, repayments made by check on accounts with itself (R_2) force a preliminary deposit of funds in anticipation of the repayment schedule.

The individual bank's control over clearing gains from repayment is consequently greater than its control over clearing losses from lending. In particular, it can hedge against clearing losses from other deposit movements by committing its funds on short term and thus assuring that it will quickly be able to redecide whether its reserves justify the continuation of its current volume of outstanding credit. The genesis of the "real bills" doctrine may well rest of this advantage of short-term lending in permitting more or less continuous adjustments of deposits to reserves. Before it was formalized by banking theorists, the "real bills" doctrine was indubitably a rule followed by practical bankers. That it has been justified on other grounds—such as the false argument that self-liquidating commercial paper is not inflationary—only highlights the tendency of human beings to rationalize their motivation even when the true reasons are adequate and give no cause for embarrassment.

The direct effects of loans of other banks will be measured by the proceeds of their loans (e_{si}) immediately deposited at the individual bank, which, of course, has no control over this source of clearing gains any more than it can control clearing losses resulting from repayment (i_{si}) of such loans.

Once loaned funds, which did not escape immediately, are on deposit at the individual bank, they are at the disposal of the borrowing firm

except for such minimum balance requirements the bank may have written into the loan contract. The control of the individual bank over their use becomes quite indirect. In the short run, a depositor firm which keeps its working accounts at the bank may rely on these loans as an important source of working capital. The bank then contributes to maintaining the firm as a going concern which will be able to sustain an income flow into its account. In the longer run, loans for capital improvements may finance a growing firm and contribute to an export surplus that will add future increments to the reserves of the bank.

In the short run the loans of other banks also contribute to the overall financing of business activity and consequently to some of the demand for the exports of depositor firms. In the long run they, too, may help bring about changes in the capital structure of the economy which can alter the export-import position of the depositors of the individual bank.

But it must be kept in mind that the foregoing remarks apply only to the impact of new money on the pattern of demand at the moment of its creation. Once the new money has entered into the income circuit, banks lose control over it until it returns to them in repayment of loans. The bulk of the spending decisions that determine the values of $(E_i - I_i)$ and $(E_{is} - I_{is})$ represent the circulation of demand deposits already in existence, and are beyond the control of either the individual bank or the banking system.

2. *Bank operating costs* (L_i, i_1, *and* i_{t1}) *and income* (R_2, e_1 *and* e_{t1}).—In any bank that is making a profit, the net of these items for the period over which profit is reckoned will be favorable to the bank. The individual bank's clearing gain or loss will depend, however, on the extent to which it can maximize disbursements (L_1) that lead directly to deposits with itself and minimize receipts (R_2) paid from its own accounts by depositors.

That part of the operating costs of other banks which lead to deposits (e_i) at Bank i and that part of the receipts of these banks which lead to withdrawals (i_i) from it are, of course, independent of the individual bank.

3. *Bank sales promotion efforts.*—An individual bank must attract at least a certain clientele in order to remain in business. It may be more or less aggressive in its efforts to hold old depositors and attract new ones. Success in these efforts will reduce the reserve losses resulting from transfers of funds out of the bank (i_{t1}, i_{t2}, i_{t3}, i_{t4} and i_{t5}) and increase the reserve gains resulting from transfers into the bank (e_{t1}, e_{t2}, e_{t3}, e_{t4} and e_{t5}). In addition, it will reduce the B_o component of the balance of payments. In its efforts to sell its services, the individual bank

must, of course, meet the competitive sales efforts of other banks within the contest of the community's need for banking facilities.

4. *Fiscal and monetary policy and the individual bank.*—The terms $(g' - g)$ and $(G' - G)$ represent the effect on the reserves of Bank i of the fiscal policy of government, implicit or explicit. At the individual bank level, however, there can be a departure from the effect of fiscal policy on the reserves of all banks collectively. For example, although the government may be impounding a surplus of receipts, thus reducing the collective reserves of all banks, $[(g' - g) + (G' - G)]$ may be positive for the individual bank.

The terms $(c_1' - c_1)$, $(c_2' - c_2)$ and $(C' - C)$ represent the effects of central bank activity on the reserves of Bank i. Although they include the operating expenses of the central bank, $(c_1' - c_1)$ and $(C' - C)$ consist principally of its open-market operations, which are undertaken at its own initiative. The impact of open-market operations on individual bank reserves, too, will not necessarily equate to their (average) effect on all bank reserves. The change in individual bank reserves must be either zero or in the same direction as the over-all change, but it will not necessarily be in the same proportion. The term $(c_2' - c_2)$ measures the net borrowings of Bank i. While the central bank can encourage or discourage the latter either by way of the interest rate charged or by its reception of prospective borrowers, reserve increases from this source are available at the option of the individual bank when needed to compensate for unanticipated reserve losses; and the subsequent drain on reserves, occasioned by repayment, is predetermined.

The clearing gains or losses that result from the dealings of the government and the central bank with depositor firms, $(G' - G)$ and $(C' - C)$, are not under the control of the individual bank except to the extent that its influence on the volume of money contributes to the price and other cyclical movements underlying the policy decisions. The individual bank, however, exercises somewhat more control over its own dealings with public institutions. To the extent that its payments to government (g) arise because of security purchases, it can participate more or less actively in new issues. Moreover, it can exercise a forward control over the maturity of the government debt that it does purchase, thus predetermining in part the return flow of reserve funds from government (g'). Likewise, although the individual bank is under strong pressures to participate in open-market sales and purchases, it can at any one time determine within rather wide limits the immediate gain (c_1') or loss (c_1) from these sources.

5. *Cash requirements of the bank and its depositor firms.*—As already noted, the only control that the individual bank exercises over its net

deposits (k') or withdrawals (k) of cash from the central bank, arise from such adjustments as it may be willing to make in the amount of vault cash it holds.

VII. A Final Word

In the broadest sense, Phillips' contribution was not his formula for determining the maximum credit expansion possible for an individual bank, nor was it the model set up to make the marginal calculation. It was to assert that a bank is not an isolated economic unit. He argued that the credit expansion potential of a given bank depends on the lending activity of all other banks in the banking system. By this interpretation, he erred only in not going far enough. The practical limits of credit expansion of a single bank cannot be considered in isolation from the spending, lending, and borrowing activity of all economic units, that is, of all banks and of all firms and of all public institutions dealing with them.

As a consequence the banking system can proceed to a full multiple expansion of deposits without the deposits of each bank growing in the same proportion. The relative sizes of banks change constantly and the distribution of reserves after multiple expansion can depart from the distribution of reserves at the beginning of the expansion. Likewise, a contraction of credit initiated by some banks need not necessarily lead to an increase in their reserves. The excess reserves created by the decline in the deposits of these banks may be transferred through the ordinary channels of trade to other banks which in turn may or may not take advantage of them to increase their own deposits through new extensions of credit.

THE LARGE CREDIT UNION

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THE EMERGENCE of the large credit union is one aspect of the post-war credit union development. At the end of 1945 some 8,900 credit unions held estimated assets of $435,000,000.[1] By December 31, 1954, estimates place the number of credit unions at 15,000 with total assets of $2,250,000,000.[2] This study, however, is not concerned with the credit union development as a whole, but with a newly emerging financial institution, the large credit union.

In this study, the large credit union is defined as one which holds assets of more than $1,000,000. The word "large" is a relative term; while a bank or a manufacturing corporation with only $1,000,000 in assets might be considered small, this amount is a relatively large sum for a credit union. Average assets of all federal credit unions at the end of 1954 were almost $143,000, and 68 per cent of all federal credit unions had assets of less than $100,000.[3] At the end of 1945 only 6 federal credit unions had assets greater than $1,000,000; at the end of 1954 there were 141 federal credit unions in the million dollar class. State-chartered credit unions antedate the federal system, going back to the original Massachusetts Act of 1909. Since there is an older group of state-chartered credit unions, more of the large credit unions are found under state charter. It is estimated that at the present time more than 300 federal and state-chartered credit unions have assets greater than $1,000,000.

Recent statistics on large credit unions will be reviewed and occasional comparisons will be made with norms developed from federal credit-union statistics. The study will endeavor to determine whether qualitative as well as quantitative differences show up in the large credit union.

Statistics on the large credit unions have recently been assembled. They have come from the efforts of the National Credit Union Man-

1. Bureau of Labor Statistics, *Activities of Credit Unions in 1945* (Washington: U.S. Government Printing Office, 1947).

2. *Federal Credit Unions, 1954 Report of Operations* (Washington: Bureau of Federal Credit Unions, 1955), p. 2, for year-end totals for federal credit unions. Statistics for state-chartered credit unions for December 31, 1954, supplied by the Bureau of Federal Credit Unions.

3. *Federal Credit Unions, 1954 Report of Operations*, p. 18.

agement Conference, a study group of officials of the large credit unions who have organized to examine the management problems peculiar to this new form of organization. The growth of this Conference illustrates the rapid development of the large credit union. At the first meeting in 1949 only 8 large credit unions were represented. At a meeting held in Dayton, Ohio, in September, 1954, 145 persons were registered and a three-day workshop was conducted. The Conference operates without publicity, without officers, budgets, or any formal organization; the large credit unions in the area of the annual meeting serve as hosts and arrangements are carried out by committees. It is concerned exclusively with the study of the new—to credit unions—problems of large-unit management.[4]

The statistics on large credit unions gathered by the National Credit Union Management Conference for the use of the meeting at Dayton include both state-chartered and federal credit unions and are for the six months ending on June 30, 1954. Statistics were gathered from 103 large credit unions: 93 of these had total assets in excess of $1,000,000 and the others, with possibly one exception, can be expected to reach that size within the near future. Eighty-nine of the 103 were identified; the others preferred to remain anonymous. From this sample it would seem that 75 per cent of the large credit unions are groups in the employ of some industry; 15 per cent are from "government groups," postal employees, police, municipal employees, and the like; and the remaining 10 per cent are found in "teacher groups."[5]

Only a small proportion of all credit unions can be expected to reach a large size; to grow into the million dollar class a credit union must start with a large potential membership and it must perform effectively in providing service so as to attract a substantial proportion of this membership potential. The average potential membership of the large credit unions was about 6,200; and the average membership was 4,623, or a 74.6 per cent ratio of actual to potential members. The largest membership in the credit unions surveyed was 28,053 and the smallest was 1,050. In contrast, on December 31, 1953, the average potential membership in all federal credit unions was 1,116, the average membership per credit union was 495, or 44.3

4. At the Dayton, Ohio, meeting three large credit unions in Dayton served as hosts for the meeting; the NCR Employees Credit Union, the McCall Employees Credit Union, and the Dayton Rubber Employees Credit Union. Paul D. Deaton, the treasurer of the NCR Credit Union, was the meeting chairman and Wilbur J. Brown, the treasurer-manager of the Cleveland Telephone Employees, was the program chairman. The group publishes processed statistical studies and minutes of meetings.

5. R. A. Steinke, chairman, Statistical Committee, *Statistics—National Credit Union Conference* (Dayton, 1954, processed).

per cent of the potential membership. The federal credit unions 18 years of age and older had a potential membership of 1,462, and a 58 per cent ratio of actual to potential members.[6]

The balance sheet totals of the 103 large credit unions aggregated almost $212,000,000, or an average of slightly more than $2,000,000 per credit union. Expressed as percentages of the total assets or liabilities, the combined balance sheet may be stated as follows:

TABLE 1

COMBINED BALANCE SHEET OF 103 LARGE CREDIT UNIONS, EXPRESSED AS PERCENTAGES OF TOTAL ASSETS AND LIABILITIES, JUNE 30, 1954

Assets	Per cent	Liabilities	Per cent
Cash in bank	5.4	Shares	90.2
Personal loans	62.0	Reserves for bad loans	2.6
Real estate loans	8.1	Undivided earnings	1.4
U.S. bonds	15.0	Other reserves	.6
Building and loan shares	5.4	Notes payable to credit unions	.5
Deposits in credit union shares	.4	Notes payable to banks	1.4
Loans to credit unions	1.7	Accounts payable	.2
Other investments	.9	Net earnings for 6 months	2.2
Furniture and equipment	.3	Unearned interest	.5
Real estate	.3	All other liabilities	.4
All other assets	.5		
	100.0		100.0

An examination of the assets reveals that the largest item is that of personal loans, 62 per cent of all assets. With 5.4 per cent of the assets in cash and 15 per cent in United States bonds, the credit unions hold over 20 per cent of their assets in a highly liquid form. Real estate loans—made only by certain state-chartered credit unions—amount to 8.1 per cent of assets and 5.4 per cent is invested in shares of building and loan societies. Slightly over 2 per cent of assets is invested in other credit unions. Fixed assets—furniture and fixtures and real estate—amount only to six-tenths of 1 per cent of total assets.

The bulk of the liabilities is found in members' shares, over 90 per cent of the total. "Shares" in credit-union terminology is equivalent to "savings deposits" in banking; the shares are withdrawable, but are usually pledged as security for the loan if a member borrows. The members' equity—shares, the various reserves and earnings—embraces all but 3 per cent of the total liabilities. There is a little borrowing from banks, 1.4 per cent of the total liabilities, and

6. These and subsequent statistics on large credit unions come from Steinke, *op. cit.*; federal credit-union averages were calculated from the *1953 Report of Operations*, p. 25; figures on federal credit unions 18 years of age and older were supplied by the Bureau of Federal Credit Unions.

from other credit unions, .5 per cent. Accounts payable are only .2 per cent of the total.

A comparison with certain statistics of 6,990 operating federal credit unions on the same date[7] reveals a difference in the percentage of assets held in personal loans; all of the federal credit unions had 67.8 per cent of their assets in personal loans to members, while in the large credit unions only 62 per cent of the assets were so invested. From both a yield and a service point of view loans to members are the ideal credit-union investment. In the large credit union the use of funds for member loans is proportionately less than in the smaller units possibly because of the neglect of personal member relations or because of a stronger emphasis on the savings function of the credit union. The large credit union, then, is forced to seek other investment outlets. A smaller and less significant difference

TABLE 2

SELECTED STATISTICS ON PERSONAL LOANS IN 103 LARGE CREDIT UNIONS, JUNE 30, 1954

	Average	High	Low
Number of borrowers	2,422	14,886	535
Percentage borrowers to members	52.1	94.4	17.7
Average personal loan outstanding	$562	$1,216	$145
Percentage of shares in personal loans	69.1	123.4	16.0

between all federal credit unions and the large credit unions is found in the percentage of total liabilities held in shares: 91.8 per cent of liabilities in federal credit unions compared with 90.2 per cent in the large credit unions. The midyear statistics on federal credit unions do not contain a complete balance sheet so a further comparison is not possible; in view of the different legal investments open to state-chartered and federal credit unions an extended comparison would not be of great worth. Judging from the year-end statements of federal credit unions, however, it looks as if the proportionate cash holdings of the large credit unions are substantially smaller than those of all of the federal credit unions.

Certain of the more important balance sheet items of the large credit unions should be examined more closely. Table 2 presents some detail on personal loans.

The large credit union has on the average 2,422 borrowers; the number of borrowers varies from a high of 14,886 to a low of 535. On the average slightly more than half of the members are also borrowers; again this ranges from a high of 94.4 per cent to a low of 17.7

7. *Operating Federal Credit Unions, June 30, 1954, by State,* tabulation furnished by the Bureau of Federal Credit Unions (processed).

per cent. The average personal loan outstanding was $562, ranging from $1,216 to $145. It should be observed that where the personal loan outstandings are low it is usually because the credit union has concentrated on real estate lending rather than on personal loans.

The extremely low percentage of fixed assets is one of the significant features of the balance sheet. One can understand how a new, or a small, credit union operating only part time, can make-do with a desk tucked away in some unused corner of a plant. It is somewhat surprising to realize that 85 per cent of these large unions own no real estate at all. Only 13 of the 103 credit unions reported that they owned their office buildings. The average value of the 13 buildings was $65,385, but the average is biased by two offices valued at $285,500 and $187,500. At the low extreme, one is valued at $6,000 and another at $3,100.

TABLE 3

DISTRIBUTION OF AVERAGE SHAREHOLDINGS OF 103 LARGE CREDIT UNIONS, JUNE 30, 1954

Average Shareholdings	Number
$700–$771	1
$600– 699	9
$500– 599	20
$400– 499	23
$300– 399	29
$200– 299	16
$124– 199	5

The average member shareholdings in the large credit unions was $446; the high average was $771 and the low $124. Average shareholdings were distributed according to Table 3. No detail is available on the individual share distribution within each credit union.

Most credit union laws require that entrance fees, fines, and 20 per cent of the net earnings be placed in a reserve for bad loans—also called a guaranty fund or a general reserve. Some credit unions also establish other reserves. In the large credit unions the reserve for bad loans—2.6 per cent of total liabilities—amounted to 4.2 per cent of personal loans; these averages are slightly lower than the ratios for all federal credit unions at the end of 1953.[8]

For the six-month period ending June 30, 1954, average earnings of the 103 large credit unions were $76,737 and average expenses were $30,789. The net earnings of $45,948 amounted to 2.2 per cent of all assets, or 2.4 per cent of shares. This is an annual rate of earn-

8. In one credit union the reserve for bad loans was 53.5 per cent of personal loans and at the other extreme it was only .8 per cent of personal loans.

ings on shares of 4.8 per cent. On the average, expenses took 40 per cent of total income; this ranged from a low of 20 per cent to a high of 100 per cent. These data are summarized in Table 4.

Interest income from loans to members accounted for 90.1 per cent of total income; interest from investments was 7.7 per cent, and all other income 2.2 per cent. Of the 103 credit unions surveyed 7 did not report on the interest rate charged on personal loans. Four-

TABLE 4

INCOME AND EXPENSE RATIOS FOR 103 LARGE CREDIT UNIONS FOR THE PERIOD ENDING JUNE 30, 1954

	Average	Ratio Average	Income High	Expense Low
Income	$76,737	100.0	100.0	100.0
Expense	30,789	40.0	20.1	100.0
Net Earnings	$45,948	60.0	79.9	0

TABLE 5

PER ANNUM INTEREST RATE (IN PER CENT) CHARGED BY 82 LARGE CREDIT UNIONS, 1954

Interest Rate	Number
12	48
11	1
10.0–10.9	9
9.0– 9.9	17
8.0 – 8.9	3
Less than 8	4

teen charged multiple rates, from 12 to 5 per cent, depending upon the type of loan and the security offered. The true per annum interest rate, or the interest charged on unpaid balaces, by the remaining 82 large credit unions that charged one uniform rate to all borrowers is set forth in Table 5. On the whole this is considerably less than the rates charged by small loan companies and compares favorably with bank rates on personal loans.

Turning next to an analysis of the credit union expenses we find the following breakdown:

	Per Cent
Total salary expense	49.1
Advertising and education expense	3.0
Loan protection insurance premium	12.0
Life savings insurance premium	6.3
Rent or building expense	1.6
Other expenses	28.0
	100.0

Possibly the inclusion of the items "Loan protection" and "Life savings" insurance, which together make up 18.3 per cent of total expenses should be qualified. Both are essentially specialized forms of group insurance. Loan protection insurance insures the life of the borrower for the outstanding balance of his loan; in the event of the death, in some cases the total disability, of the borrower, the credit union is paid the balance remaining on the loan. Life savings insurance insures the life of the saver for the amount of his savings up to $1,000. The member does not pay directly for any insurance premiums; of course he may receive a lowered dividend rate than he would have received if the credit union did not carry the insurance. Of the 103 large credit unions, 84 held loan protection insurance and 50 life savings insurance. Thus while insurance is listed as an expense—and it is a legitimate business expense toward the expeditious collection of loans of deceased borrowers, and in another sense it might be considered as a cost of capital acquisition—it is also a dividend paid in the form of low-cost group insurance for the members. The small percentages of expenses allotted to advertising, 3 per cent, and to rent, 1.6 per cent, should be noted.

Salaries are moderate; the average treasurer's salary for the 36 credit unions which reported this item is $6,447, ranging from $13,500 to $3,600. The treasurer is the only official who, under the federal law, and almost all state laws, may receive a salary. All other officials serve on a voluntary basis. The average number of full-time employees is 7 and the average number of part-time employees is 3. The highest number of full-time employees is 65 and the lowest 2; part-time employees range from 16 to none. Other expenses, largely uncontrollable items such as bonding, examination fees, and the like, are not broken down for further examination.

The ratios of income and expense in the large credit unions do not differ substantially from the average of the entire group of federal credit unions; the ratio of income to expense in the large credit unions is 40 per cent; among all federal credit unions in 1953 it was 40.6 per cent. Salaries in the group of large credit unions was 49.1 per cent of all expenses; in the federal union group it was 50.1 per cent. Under present conditions economies of scale seem to be rather limited in credit union operations. The relationship of efficiency to size of credit union can be studied from federal credit union statistics. These are presented in Tables 6 and 7. Here the classification of expense items is a bit different from that used with the large credit unions.

In Table 6 the 1953 income and expense items of all federal credit

TABLE 6

PERCENTAGE OF INCOME AND EXPENSE ITEMS, FEDERAL CREDIT UNIONS BY SIZE OF ASSETS, 1953*

	INCOME†				EXPENSE‡								
SIZE OF ASSETS	Interest on Loans	Income from Investment	Other	RATIO OF EXPENSES TO INCOME	Interest on Borrowed Money	Treasurers' Salaries	Other Salaries	Surety Bond Premium	Borrowers' Protection Insurance	Life-Saving Ins.	League Dues	Supervision Exam.	Other
Less than $ 10,000...	94.7	2.8	2.5	53.5	2.8	22.6	1.8	7.3	10.9	6.0	3.8	14.8	31.2
Less than $ 10,000...	94.7	2.8	2.5	53.5	2.8	22.6	1.8	7.3	10.9	6.0	3.8	14.8	31.2
$ 10,000–$ 24,999...	94.5	4.7	.8	46.8	2.5	29.1	5.4	3.7	12.5	6.7	3.6	14.2	22.3
$ 25,000–$ 49,999...	93.5	5.7	.8	43.9	2.5	31.6	9.1	3.0	12.7	6.6	3.9	11.7	18.9
$ 50,000–$ 99,999...	92.3	7.0	.7	41.0	2.8	30.2	14.0	3.1	12.6	7.3	3.8	8.4	17.8
$100,000–$249,999...	91.1	8.2	.7	41.0	2.9	23.3	25.0	2.6	12.6	5.9	3.9	5.6	18.2
$250,000–$499,999...	89.9	9.3	.7	42.3	3.0	15.6	36.1	1.8	11.5	6.0	3.6	3.8	18.5
$500,000–$999,999...	89.3	10.1	.6	38.7	2.6	12.7	40.7	1.8	11.7	5.6	3.0	3.4	18.5
$1,000,000 or more...	86.6	12.5	.9	38.1	3.1	6.0	49.3	1.0	10.8	4.9	1.7	2.7	20.5
All credit unions.....	89.8	9.4	.8	40.6	2.8	17.4	32.7	2.1	11.8	5.9	3.2	5.1	19.0

* Calculated from 1953 *Report of Operations*, pp. 20–21.

† Income items add to 100.0 per cent.

‡ Expense items add to 100.0 per cent.

unions, classified by size of assets, are analyzed. One rough ratio of efficiency, in credit union comparisons, is the ratio of expenses to income. The average of all credit unions is 40.6 per cent. But this average is almost reached with credit unions in the $50,000–$99,999 size group where this ratio drops to 41 per cent. The smallest credit unions, as one might suspect, have a higher ratio. The ratio rises again in the $250,000–$499,999 group, going to 42.3 per cent; evidently in this asset class the credit union changes from a small part-time operation to a full-time organization. Thereafter, in the federal group, the ratio of expenses to income drops, reaching a low of 38.1 per cent in the group with more than a million dollars in assets.

From Table 6 one might infer that such economies as are found in the larger credit unions are due not so much to operational efficiency as to a stronger bargaining position of the larger units. Fee schedules, for example, seem to be set regressively to favor the larger credit unions: supervisory and examination fees comprise 14.8 per cent of the expenses of credit unions with assets of less than $10,000, but only 2.7 per cent of the expenses of credit unions with more than $1,000,000; league dues vary from 3.6–3.8 per cent of the expenses of size groups to $500,000, but drop to 1.7 per cent with the group over $1,000,000; similarly, surety bond premiums drop from 7.3 per cent in the smallest size group to 1.0 per cent in the largest. The drop in the proportion spent for life-savings insurance in the larger groups is accounted for by the fact that premiums are not paid for more than $1,000 in any account.

There seems to be little saving accompanying size in the many operating items covered by "Other Expenses"; after dropping to 17.8 per cent of total expenses in the $50,000–$99,999 size group, other expenses rise as the size of the credit union increases. Salaries, the most important expense item, seem to increase as the credit unions grow: salaries rise from 24.4 per cent of total expenses in the group with assets of less than $10,000 to 55.3 per cent in federal credit unions with over $1,000,000. This is understandable: in the early days of a credit union much of the work is voluntary; as a credit union grows it is able to pay the treasurer a little more. But when the credit union develops to a full-time operation and it is necessary to hire a staff, wages and many other expenses will jump; this level seems to be reached in the $250,000–$499,999 group. Measured as a percentage of total income—this is not shown on the table—wages seem to stabilize at between 20 and 21 per cent of total income in credit unions with more than $500,000 in assets; in these large units increases in wages are just about compensated for by in-

creases in earnings. Theoretically, within a certain range an increase in volume could be managed with no significant increase in cost. Such cost behavior has not been observed in this study, however.

The subject of credit-union costs must be approached with caution. It is a question of definition whether to include as a cost of operation the purchase of low-cost group insurance for members. Also there is the element of subsidy, a subject later to be discussed. The cost of loans might be considered on a per dollar basis or on a per unit-loan basis. The per dollar measure is useful particularly in considering losses from bad loans. The per unit-loan basis, however, provides a figure that is easier to grasp and one which has application in administrative decisions.[9]

Again we must go to federal credit-union statistics as the Conference statistics on the large credit unions were not reported in a form suitable for a unit-loan cost analysis. In 1953 a total of 2,475,134 loans were granted to federal credit-union members. Since 90 per cent of the total income of federal credit unions comes from member loans it might not be unreasonable to charge these loans with 90 per cent of the expense; this is perhaps arbitrary, but one would not be far off in estimating that 90 per cent of the work in a credit union is connected with member loans and 10 per cent with the management of investments. Ninety per cent of total expenses amounted to $20,563,360; divided by the total number of loans this gives an average cost per loan-unit of $8.30. At the average interest rate of 10.21 per cent per annum charged by federal credit unions in 1953, this would mean that any loan under $160, repayable in twelve equal instalments, would not be carrying its costs.

This figure, of course, needs further interpretation: with facilities already at hand an additional loan, say of $50, can be made with little or no cost other than that of the forms used in the transaction. This is the concept of marginal cost, the cost of an additional unit once facilities adequate to a certain size operation have been provided. A credit union equipped to handle, say 1,000 loans a year, can with almost no additional cost put through 1,001 or 1,002 loans. But if the business expands to a point where, say, 1,500 loans are accommodated, average costs might rise once more.

Since credit unions are organized as individual firms they are distinctly limited in their control over costs. Economies of scale such

9. For a discussion of costs in personal finance companies see M. R. Neifeld, *Personal Finance Comes of Age* (New York: Harper and Bros., 1939), chapter 25; see also Ralph A. Young and Associates, *Personal Finance Companies and Their Credit Practices* (New York: National Bureau of Economic Research, 1940), chapter 5.

as the prorating of executive specialists, which are available to personal finance chains, are not at present accessible to credit-union management; this might eventually be approximated by state league or Credit Union National Association activity. But while specialization, research, and the spreading of costs over large units offer some opportunities in cost reduction, the greatest possibility of cost reduction is found in the size of the average loan. Here again the credit union is in a different position from that of a personal finance company; the personal finance company, as a matter of policy, can easily determine the size loan it wishes to make.[10] Presumably it will do this with the maximization of profits as its objective. But assuming that a credit union management realizes that a large loan costs less

TABLE 7

LOAN AND COST ANALYSIS, FEDERAL CREDIT UNIONS BY SIZE OF ASSETS, 1953*

Size of Assets	Number of Loans	Amount of Loans	Average Size Loan	90 Per Cent of Expenses	Average Cost per Loan
Less than $ 10,000	55,931	$ 7,596,508	$136	$ 155,079	$ 2.77
$ 10,000–$ 24,999	119,771	23,779,270	199	483,188	4.03
$ 25,000–$ 49,999	185,675	49,012,832	264	1,023,418	5.51
$ 50,000–$ 99,999	291,121	91,464,852	314	1,971,890	6.77
$100,000–$249,999	548,813	207,142,185	377	4,513,641	8.22
$250,000–$499,999	480,506	200,248,344	417	4,508,583	9.38
$500,000–$999,999	393,734	176,473,948	448	3,684,339	9.36
$1,000,000 or over	399,582	204,179,180	511	4,223,229	10.57
All credit unions	2,475,134	$959,897,119	$388	$20,563,360	$ 8.30

* Statistics from tabulation furnished by the Bureau of Federal Credit Unions.

to make than does a small one, nevertheless the credit union will not insist, or even encourage a member to make a large loan if a smaller amount will take care of the member's needs. It is likely, however, that the concept of marginal costs is behind a policy of multiple rates found in certain credit unions; large loans are more profitable, so the borrower of a large amount pays a low rate while the borrower of a small amount pays the legal maximum. The credit union leadership has opposed this practice on the grounds that the credit union exists primarily to help the small borrower, not to maximize profits.

The relationship of the cost per loan and the size of credit unions is examined in Table 7. After charging 90 per cent of the expenses to loans, this table shows that the average cost per loan increases as the size of the credit union increases; in credit unions with less than $10,000 in assets the average cost of a loan is $2.77, and in credit unions with more than one million in assets it is $10.57. The average unit-loan cost seems to be stabilized at $9.37 in the size groups from $250,000 to $999,999. Possibly the million dollar group in 1953 was

10. Neifeld, *op. cit.*, p. 204.

influenced by the inclusion of some new, high-cost credit unions in that group. This table also shows that the average size loan increases as the size of the credit union increases. This might lead one to expect a lower cost per loan; but the opposite has been true. No frequency distributions on the size and the duration of loans exist; these would be helpful in a cost analysis. However, the main point of the analysis seems to be established: federal credit union operations do not show any significant economies of scale.

The large credit union grows into maturity without being saddled with any burden of prior developmental costs. From a cost point of view a credit union is in a fortunate position. This is particularly true for a new credit union. At its inception, at least, it assumes no fixed costs and few variable costs. The charter fee is nominal—$25.00 for a federal credit union—and, if necessary, the initial supplies are provided on credit. The sponsoring firm not infrequently absorbs these items. The firm usually provides office space and equipment, and in a new credit union all of the labor is voluntary. As the credit union grows it gradually takes over more of the variable cost items: the treasurer is paid a salary and clerical assistance is hired. Other costs, bonding, insurance, supervision, league commitments, and the like, increase in proportion to the growth of the credit union. By the nature of the operation fixed costs need never bulk very large in the total cost picture.

The cost of capital is also favorable to the credit union. The credit union as well as other credit extending institutions operates in an imperfectly competitive market. The local member, depositing his savings in a credit union, if he considers at all the question of interest rates, usually has only the alternative choice of the rate paid by banks and savings and loan associations. Studies seem to show that in savings institutions no great economic significance is attached to the interest received by the depositor. Convenience rather than rate of return would seem to be the crucial element.[11] Credit unions operating on or near the company premises and with payroll deductions frequently have a competitive advantage in this connection.

A substantial area of the credit union development cannot be analyzed in terms of the familiar economic categories. Part of the explanation of the growth of this movement will be found in what Professor E. R. Walker in his book, *From Economic Theory to*

11. *Consumer Survey on Savings Habits* (U.S. Savings and Loan League, 1954), pp. 37–39; James S. Duesenberry, "Savings Behavior of Individuals," *Savings in the Modern Economy* (Minneapolis: University of Minnesota Press, 1953), p. 200.

Policy, has called "extra-market operations."[12] He says that dissatisfaction is frequently the motive behind such extra-market operations as are deliberately preferred to market operations. In other words, our analysis of credit-union growth cannot ignore the fundamental motivations of the credit-union leadership. For example, a credit union might yield little or no financial return to the organizer; it might even diminish it. Yet the credit union official might find in this activity the satisfaction of a desire for power and prestige, or for the fulfilment of a social welfare ideal. It would seem that there are aspects of the credit-union development which are applications of extra-market theory; the zeal of the credit-union organizer and manager does not solely depend upon profits.

As one might expect, the survival record of large credit unions is excellent. While statistics on the liquidation of state-chartered credit unions are difficult to secure, an examination of federal credit union liquidations reveals that no million dollar credit union was ever liquidated. Thirteen federal credit unions with assets of more than $100,000 were liquidated from 1945 to 1953; this was six-tenths of 1 per cent of total liquidations. Of this 13, 9 paid liquidating dividends of more than $73,000, 3 paid exactly 100 per cent of shareholdings, and only one suffered a loss. Eleven of the 13 credit unions were liquidated for reasons external to the credit union and only 2 closed as a result of internal management problems.[13] The record is marred by two large scaledowns, one in 1952 for $314,108, and one in 1953 for $406,027. These followed defalcations in excess of surety bond coverage. The credit unions involved are still operating. There have been other much smaller scaledowns, in the aggregate not very significant.[14] In no case has a scaledown occurred in a federal credit union with assets of more than $1,000,000. The record seems to show, therefore, that credit unions of a large size have exhibited a certain amount of financial stability.

When one considers that in the 103 large credit unions the member shareholdings are for the most part small sums—$446 average—the average dividend rate of 3.9 per cent seems rather high. Dividends ranged from 6 per cent to 2 per cent as set forth in Table 8.

12. E. R. Walker, *From Economic Theory to Policy* (Chicago: University of Chicago Press, 1943), chapter vi.

13. John T. Croteau, "Federal Credit Union Liquidations, 1935–1951," *The Journal of Business of the University of Chicago,* Vol. XXV, No. 3, July, 1952; 1952 and 1953 data supplied by the Bureau of Federal Credit Unions.

14. Bureau of Federal Credit Unions, *Insurance of Shareholdings in Federal Credit Unions* (Washington: October, 1953, processed), Appendix, Table 1.

Admittedly, part of this favorable dividend record is due to subsidy. The major item of subsidy is found in the voluntary managerial and supervisory effort of the membership. The committee which passes on loans spends many hours in studying and in approving loan applications: one large credit union reported an average of 1,881 personal loans per month; monthly averages of 700 or 800 are common. Some credit committees meet daily at lunch to handle these applications. Another committee, the supervisory committee, must audit regularly the books of the credit union and verify the members' accounts. In a million dollar credit union this is a formidable task, although outside auditors are frequently used. The board of directors, the third major board in the organization, has general

TABLE 8

DIVIDENDS PAID BY 103 LARGE CREDIT UNIONS, 1953, IN PER CENT

Dividend Rate	Number
6	5
5.0–5.9	11
4.0–4.9	46
3.0–3.9	37
2.0–2.9	4

charge of the business. All of the officials of the credit union except the treasurer, who may or may not be the manager, are forbidden by law to receive salaries for their work. The regular clerical staff, of course, must be paid according to competitive wage scales. The credit union is a self-help organization: since it is organized among a group with some bond of occupation the members have a direct personal interest in its success and will work for its advancement. In this way costs are kept down, interest charges are moderate and dividends are fairly high.

In addition to the unpaid work of its officials there is an element of employer subsidy. Subsidy is difficult to determine; it is even difficult to define. If a credit union can free the personnel director from troublesome problems of wage garnishments or of family adjustment, it is possibly paying for the privilege of operating on company premises, for space, or for the additional accounting work involved in payroll deductions. Other services, such as check cashing, in some locations would have to be provided by the employer if the credit union did not take them over.

The National Credit Union Management Conference listed forty-

eight services which are currently being provided by the large credit unions under study. Omitting the trivial or exceptional services, and remembering that federal credit unions are prevented from extending certain of these services by a prohibition against "general banking business," the following list of thirty services provided by the large credit unions—in addition to their primary thrift and loan function—is indicative of their usefulness.

Of course it is understood that not all of the credit unions provide all or even most of these services. The list is indicative, however, of the service possibilities of the credit union. It would seem that the

TABLE 9

SERVICES OFFERED BY CREDIT UNIONS OF THE NATIONAL CREDIT UNION MANAGEMENT CONFERENCE

1. Automobile Insurance
2. Automobile Licenses
3. Bond Safekeeping
4. Brokerage Services
5. Budget Analysis
6. Cash Checks
7. Cash Bonds
8. Christmas Savings Club
9. Consumer Research File
10. Death Benefit Fund
11. Drawing Deeds
12. Drawing Wills
13. Drivers' Licenses
14. Financial Library
15. Fire Insurance
16. Group Health Insurance
17. Income Tax Collections
18. Income Tax Reports
19. Issue Bonds
20. Life Insurance
21. Money Orders
22. Monthly Paper
23. Notary Service
24. Pay Day Loans
25. Photostats
26. Safety Deposit Boxes
27. Salary Plan (Teachers)
28. Travelers' Checks
29. Utility Bills
30. Vacation Club Savings

personnel director of a large firm might find in the large credit union an important adjunct to the welfare activities of the company.

At attempt was made to determine the amount of employer subsidy among the 103 large credit unions in the survey. No subsidy was reported by 47 credit unions. The other 55 credit unions reported an average subsidy of $3,925; the highest was $75,000 and the lowest $75. While payroll deduction is not essential to credit union success it is very beneficial; 70 credit unions reported that they had the privilege of payroll deductions while 33 did not. Some credit unions pay the employer a fee for this service; some cash checks in lieu of a fee.

Possibly the large credit unions receive a moderate subsidy from their tax-exempt status. The federal law and most state laws exempt credit unions from income taxes, although credit unions pay other forms of taxes. This is an involved question and one which is outside the scope of this study. In view of the nature of the operation and

the amounts involved it is doubtful whether a tax would have affected very much the financial ratios developed in this study. The federal credit unions, and those of some states, are now self-supporting in regard to examination and supervision fees. Credit unions do not have "deposit insurance"; and apparently they do not want it to judge from resolutions passed annually at meetings of the Credit Union National Association.[15]

One of the difficulties faced in a study of the large credit union is that it has been necessary to use the ratios and the concepts originally developed for the evaluation of other agencies of personal finance. The credit union with a strong service motivation does not exactly fit into the familiar financial categories.

The large credit union, as examined in this study, still retains the essential characteristics of the credit union: the tradition of voluntary service of officials, direction by detailed legislative controls and devotion to member service. In balance sheet composition there are certain differences between large and small credit unions; the large credit unions hold a proportionately smaller amount of assets in loans to members and in cash and a slightly smaller proportion of liabilities in member shareholdings. An analysis of operations, however, shows no significant difference between credit unions of different size; the large credit union shows few economies of scale and where economies are found they seem to be the result of bargaining strength rather than of operating efficiency. Since loan-unit costs depend primarily on the size of the loan rather than on the spreading of overhead items among a large number of units, the service-oriented credit union which does not attempt to influence the amount which a member decides to borrow is limited in its control over costs. It is simply providing the services for large groups that small credit unions provide small groups. It is associated with big business and big government, and so is finding a place in our financial structure.

15. C. F. Eikel, acting managing director in a report to the members of the Board of Directors of the Credit Unions National Association, May 5, 1954, p. 26 (processed).

COMMENTS

THE THEORETICAL VALUE OF A STOCK RIGHT: A COMMENT

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THE *Journal of Finance* recently published an article by Professor G. H. Evans, Jr., who criticized the traditional method of determination of the theoretical value of a stock right and suggested an "improved" method of computing such a value.[1] His method does not appear to have added anything nor to have improved the approach in what Professor Evans calls the "traditional formula."

The traditional formula is a method of computing the theoretical value of a stock right based on the market price of the stock. There are two variations of the formula, depending upon whether one wishes to compute the value before or after the stock sells ex-rights. The formula to be used before the stock sells ex-rights is

$$R = \frac{M_1 - S}{N + 1},$$

and the formula to use when the stock sells ex-rights is

$$R = \frac{M_2 - S}{N},$$

where M is the market value of the stock (M_1, before ex-rights; M_2, ex-rights), S is the subscription price, and N is the number of old shares necessary for the holder to subscribe to one new share. The formula makes no attempt at a theoretical determination of M. It would appear to most that it is difficult to improve upon market price as a basis for determining realizable monetary value. The traditional formula is purely an operational or mechanical method of computation based on the difference between the price one must pay in the market for stock and the price at which the holder of rights may secure the stock.

The theoretical value of the stock right computed in this manner

1. G. Heberton Evans, Jr., "The Theoretical Value of a Stock Right," *Journal of Finance*, X (March, 1955), 55–61.

will not necessarily be equal to the market value of the stock right. The market value of rights, as well as stock, is determined by supply and demand. It is possible, as Dewing points out, for the supply of rights to be greater at the end of the subscription period than at the beginning and thus, if speculators do not pick up the stock, the theoretical value may differ from market value of the stock right.[2] Purchase of stock through the purchase of rights also involves some additional effort by the investor. The market for rights will evaluate this fact and generally offer rights at a slight concession.[3] For this reason, and others, the traditional formula may give results differing from the market value of the right.

Professor Evans severely criticizes the traditional formula. He states that, ". . . the traditional formula can provide correct answers for only a very limited range of assumptions. . . ." He claims the formula makes assumptions concerning earnings, dividends, and price/earnings or price/dividend ratios. The traditional formula requires no such assumptions. The market price of the stock, which is used in the formula itself, changes price/earnings and price/dividend ratios as it fluctuates. Any changes in expected earnings or dividends will be appropriately reflected in the market price of the stock.

In addition to the foregoing, he criticizes the second variation of the traditional formula, using M_2, by saying that its users differ as to the M_2 to choose. Should the user take M_2 at the beginning of the subscription period, or later? Obviously value is not a constant and varies as the M_2 varies and the user chooses the M_2 according to the use desired of the computation. If he wants current value of the right, he uses current market price of the stock. Professor Evans' solution makes no improvement over this so-called problem, for the use of his formula also requires the choice of some price/earnings ratio.

He criticizes the traditional formula because it does not take into consideration the fact that the earnings on the new money invested may not be the same as on the money previously invested. How does one say if it is the earnings on the new money or the old money that change? How does the investor or user determine ". . . the expected rate of earnings on additional funds. . ."? Irrespective of these questions, the traditional formula need not make any assumption concerning earnings. The market price of the stock evaluates any anticipated change in earnings. The market price also reflects any changes

2. Arthur Stone Dewing, *The Financial Policy of Corporations* (New York: Ronald Press, 1953), 5th Ed., Vol. II, p. 1159.

3. *Ibid.*, p. 1158.

in dividends and changes in proportion of earnings paid out as dividends.

Professor Evans' solutions to his problems center around the introduction of two algebraic formulas. He substitutes for the market price of the stock itself a few variables which are the main determinants of the market price of stock. It seems he is not certain which variables to introduce, since he sets up two formulas, the user's choice between them depending on whether he feels market price is determined by earnings or by dividends.

The fact that Professor Evans substitutes an equation of what he believes determines market price of stock for the market price itself does not improve on the traditional method of determining the theoretical value of the stock right. The use of determinants of market price injects a further basis for error in determining stock right value. There are not only the errors of the traditional formula as pointed out by Dewing[4] and others, but an additional error due to the inability of his formula to determine accurately market price.

For example, the formula to be used when stock prices are determined by earnings is:[5]

$$R = \frac{N_1'}{N_0}\left[yC_0\left(\frac{E_0N_0 + r_1'SN_1'}{N_0 + N_1}\right) - S\right]$$

When M is substituted for

$$yC_0\left(\frac{E_0N_0 + r_1'SN_1'}{N_0 + N_1'}\right),$$

one has the formula $\frac{1}{N}(M - S)$, which equals $\frac{M_2 - S}{N}$ (the traditional formula).

$$yC_0\left(\frac{E_0N_0 + r_1'SN_1'}{N_0 + N_1'}\right)$$

is nothing more than the price/earnings ratio times earnings per share, or market price. His formula to be used when stock prices are determined by dividends is very similar and the same criticisms apply.

4. *Ibid.*, p. 1159.

5. In this formula, C_0 = price/earnings ratio before stock ex-rights, E_0N_0 is total earnings before stock issuance; $r_1'SN_1'$ are expected earnings on "new money," S is subscription price, N_0 is old number of shares, N_1' the additional shares and y is the factor to be multiplied by C_0 to secure new price/earnings ratio.

Professor Evans concludes, with regard to the traditional formula, that it ". . . requires less knowledge or estimation than . . ." his formulas, ". . . but that fact scarcely provides a basis for continued resort to it." The fact that it requires little information should speak in its favor, if it does a better job. He states that ". . . at least clarity of one's assumptions is gained by the use of new formulas." They are clear, but the introduction of unnecessary assumptions in his formulas serves only to reduce their value. He states, ". . . the traditional formula can provide correct answers for only a very limited range of assumptions. . . ." The only assumption it makes is that the value of the right depends basically on the market price of the stock, which appears logical and less restrictive than Professor Evans' assumptions. He also criticizes the traditional formula by saying, ". . . the theoretical value of a right need not remain constant throughout the period of subscription." Obviously it will not if the market price (M_2) should vary. His formulas add nothing to the solution of other factors (besides market price) affecting the value of the right.

The formulas used by Professor Evans are basically the traditional formulas, but he replaces the market price of stock with what he believes are the determinants of market price. The substitution of determinants of market price for the market price itself introduces an entirely different issue. What determines market price? This issue should not be introduced into a discussion of the theoretical value of the stock right, but should be examined separately. In view of our present limited knowledge, I would also take issue with any formula designed to forecast market price.

THE THEORETICAL VALUE OF A STOCK RIGHT: A COMMENT

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THE PAPER by George Herberton Evans, Jr., "The Theoretical Value of a Stock Right" (*Journal of Finance*, Vol. X, No. 1, March, 1955), is in need of considerable clarification. The argument which is particularly disturbing and which is, in fact, the essence of the article is the assertion that investors who use the conventional value-of-rights formula do so on the basis of a rather rigid set of assumptions concerning earnings, dividends, price-earnings ratios, and others.

If this is taken literally, then the proposition is false. For, given that an investor wishes to buy the stock of a particular company, i.e., at the given market price M he finds that this investment is more attractive than any other alternative use of his assets (just why he believes it is better is irrelevant); and, given that the stock is selling ex-rights, then it is perfectly rational to use the formula to determine whether it is more economical to purchase the stock directly or indirectly through the use of rights. Ignoring transaction costs, if the value yielded by the value-of-rights formula is greater than the current market price of the rights, then it is less expensive to buy the rights and exercise them. If the relationship is the reverse, then it is more economical to buy the stock directly. There is obviously nothing implied by this procedure with respect to earnings, dividends, and so forth.

It is true that this particular use of the formula is not necessary for the purpose of making this decision. For the investor could adopt the alternative procedure of comparing the sum of the total current market value of the number of rights required to buy one share and the subscription price with the current market price of the stock. The action to be taken here is rather obvious. Moreover, it is quite apparent that traders can use the formula in the same way for arbitrage purposes. Again, it is not necessary that they do; but they can, and some undoubtedly do, use it in this way.

This brings us to what I believe is the real issue and perhaps the source of the confusion. What is the precise meaning of the value-of-rights formula? In the case where stock is selling rights-on, the

expression is derived by equating the sum of (1) the subscription price of the stock (S) and (2) the product of the number of rights required to buy one share (r) and the value of a right such that an investor would be indifferent as to whether he bought the stock directly or indirectly (V) with the current market price of the stock (M) less the value of one right (V).

$$V r + S = M - V$$

and hence,

$$V = \frac{M - S}{1 + r}$$

The crucial thing to note here is that V must satisfy the restriction that the investor is indifferent whether he buys the stock directly or indirectly. The expression may also be looked upon as an equilibrium condition between V and M. However, what Professor Evans is asking the reader to do is absolutely different. In general, his procedure is logically equivalent to forecasting the future market price of the stock (ex-post subscription period) (P_1) and substituting this value in place of the current market price in the value-of-rights formula.[1] Thus

$$V = \frac{P_1 - S}{r + 1} \text{ rights-on}, \quad \text{or} \quad V = \frac{P_1 - S}{r} \text{ ex-rights}$$

where P_1 may be a function of whatever the investor believes to be important. Here, Professor Evans considers two distinct P_1 functions, but their nature is not relevant to the issue at hand. Now all of the implications concerning rigid assumptions follow from this simple substitution. The implications arise from different postulates regarding the nature of the P_1 function.

The vital question which emerges at this point is how the investor should use the Evans expression for purposes of making decisions. Although Professor Evans is quite emphatic in pointing out that his

1. Professor Evans' formula (5) on page 58 (*Journal of Finance*, Vol. X, No. 1, March, 1955), reads:

$$R = \frac{P_1 - S}{N_0 / N_1'}$$

where R is the value of a right, P_1 the forecasted or expected price of the stock after subscription, S the subscription price, N_0 the number of outstanding shares before the subscription, and N_1' the additional number of shares to be offered. The ratio of N_0/N_1' is obviously the number of rights required to buy one new share. This formula applies, of course, when the stock is selling ex-rights.

Clearly, the only difference between this expression and the conventional one is the replacement of P_1 for M.

formulation is better for the investor to use, he fails to show how the investor should use it, i.e., how to make decisions.

Suppose, by the use of this procedure, the investor finds the value of V to be above the existing market price of the rights. Does this mean that the investor should buy the rights and exercise them, buy the stock, or take no action at all? Suppose this means that he should buy the rights and exercise them. Is this course really optimal? It may be, but obviously it still may be more economical to buy the stock rather than the rights since the market value of the rights may be above the "equilibrium" value implied by the conventional procedure. Therefore, this is optimal if, and only if, the market value of the rights is less than the "equilibrium" value yielded by the conventional procedure. But this is precisely equivalent to the procedure indicated at the beginning of this note. Hence, there is no necessity for making the V calculation by the Evans procedure.

This author does not know of any rational decision-making procedure which embodies Professor Evans' formula and which is really logically different. At any rate, the burden is on Professor Evans to demonstrate a rational decision-making use which yields conclusions different from those implied by the conventional procedure.

My colleague, Professor Robert M. Solow, has suggested a procedure which we believe is what Professor Evans is intuitively striving for. Here, the alternatives are buying the stock directly, buying the rights, or waiting until the end of the subscription period to buy the stock. We assume that the investor wishes to buy the stock, and the problem is to select the most attractive means from these three alternatives. The expected price of the stock ex-post subscription period may then be compared with its current price and the current price of the rights. The investor will select that course of action which involves the smallest outlay.

The expected price of the stock may be calculated in any way the investor chooses, i.e., selecting one of Evans' P_1 functions, for example, but again it is clear that Professor Evans' value of rights formula is not necessary for this method.

To summarize the main arguments, we have shown that:

1. The "rigid" implications (or assumptions) which Professor Evans finds in the conventional expression for the value of a right follow from: (*a*) the substitution of an expected market price of the stock (ex-post subscription) for the current price in the conventional expression, and (*b*) postulating different determinants of this expected price.

Professor Evans could go on indefinitely by varying the nature of the P_1 function and conceivably arrive at an infinite variety of assumptions which he could say were implied by the conventional expression. Conditions (a) and (b) are necessary for his argument. For, given the implications which he has derived, we can easily work back and arrive at (a) and (b). Moreover, conditions (a) and (b) are not implied by the derivation procedure which we used to arrive at the conventional expression. For, suppose this were not the case. Obviously, an immediate contradiction arises, since the value of V would not always satisfy the restriction that the investor must be indifferent as to whether he buys rights or the stock at its current price.

2. Apart from the argument raised in (1) above, Professor Evans' formulation may still be useful for some decision-making purpose on the part of the investor. We investigated one possible criterion (in fact, the only one which appears intuitively plausible) and found it wanting. And despite the fact that this appears to be one of the purposes of his expression, Professor Evans fails to demonstrate a rational use which is logically different from the conventional procedure.

ABSTRACTS OF DOCTORAL DISSERTATIONS

THE DEVELOPMENT OF A GENERAL QUASI-REORGANIZATION CONCEPT*

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THIS DISSERTATION is a study of a procedure, entitled a "quasi-reorganization," whereby a continuing enterprise could establish a new basis of accountability for its financial statements without formal court proceedings or creation of a new legal entity. The significance of the study arises from an increased recognition of the limitations inherent in current generally accepted accounting principles and the need to consider alternative proposals to provide flexibility rather than a rigid adherence to a historical cost basis. The purposes of the study are: (1) to develop a general quasi-reorganization concept for all conditions which might lead to a change in basis of accountability; (2) to present alternative standards and procedures and to indicate those most consistent with the general concept; (3) to provide an adequate basis for interested parties to appraise the relative advantages and limitations of the concept as well as the inherent problems in effecting it.

A review of the accounting literature and corporate statements related to the write-up movement of the 1920's and the write-down movement of the 1930's provided a historical perspective of the objectionable reporting in these periods and a basis for the proposal of improved procedures. The development of a limited quasi-reorganization procedure by the American Institute of Accountants and the Securities and Exchange Commission, likewise, was discussed as an antecedent of the general concept.

The development of the general concept and the related standards and procedures was divided into asset and equity phases. The subsequent determination of income was included within the discussion of the equity accounts. The presentation of asset accounts included the following: a definition of an asset for accounting purposes; alternative value concepts; a proposed value concept; valuation pro-

* A dissertation completed at the University of Michigan in 1955.

cedures to implement the value concept; the resources to be revalued; the specific asset restatements; and adequate disclosures. The presentation of equity accounts included the following: the nature and significance of equity representations; existing authoritative equity reporting principles; corporation code provisions; income tax laws; requirement of stockholder consent; accounting for subsequent transactions with equity holders; and disclosures in financial reports.

It was proposed that an "investment accountability" be established for all values intrusted to management. This required determination of total enterprise value. An "income accountability" would be attained by valuation of specific assets in accordance with a "going-concern replacement cost basis" which would provide for consistent subsequent income determination as well as comparability with the reporting of competitors. A resulting differential valuation would be recognized and amortized against income. It was proposed that all creditor and stockholder interests be valued and classified as contributed capital. A new dated retained-income account would be initiated. Subsequent interest charges and income taxes would be computed consistently with the restated asset and equity accounts.

The proposed general concept is a composite of a group of standards encompassing a complete change in basis of accountability. Even though the general concept may not attain widespread acceptability for application in its entirety, it provides a basis for judgment of the significance of alternative procedures. Further, the concept is deemed to have significance in other areas wherein a revised basis of accountability is proposed. The writer concludes that procedures based upon the general quasi-reorganization concept would elicit widespread agreement among interested parties and become eligible for admittance to the body of generally accepted accounting principles.

THE VALUATION OF CLOSELY HELD INDUSTRIAL SHARES FOR FEDERAL TAX PURPOSES*

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A COMPREHENSIVE study dealing with the valuation of closely held shares for federal tax purposes requires an interdisciplinary approach embracing the fields of economic theory and its relationship to valuation, the law of valuation for federal tax purposes and security analysis. This is the approach which was adopted by the author. And through the utilization of this approach it was possible to bring together and interrelate the major aspects of this valuation problem.

The value to be sought, as set forth by the applicable regulations, is the "fair market value" of the shares on the critical date. The courts frequently interpret "fair market value" to mean the price at which an *actual* willing buyer and seller would agree upon, both being reasonably conversant with the facts and neither being under any compulsion to buy or sell.

In the determination of "fair market value" for federal-tax purposes the same method or methods of valuation are employed as would be utilized if the shares were being valued for private business purposes. There is neither a method of valuation nor a concept of value which is relevant for tax purposes alone. If such a situation were to prevail, it is suggested that the valuations would tend to be unrealistic and inequities would be cast upon the government and the taxpayer indiscriminately.

Numerous methods of valuation are found in the literature. These methods differ significantly and are applicable under varying circumstances. However, they are all found to be aimed at one objective—the determination of the value of the shares based on the flow of income and/or capital to be derived from the shares and the risk entailed in securing this return. This fundamental valuational objective is economically sound, in harmony with accepted business practice and not in contradiction with legislative intent.

Though the code and the applicable regulations require that "all relevant facts" be considered, the following methods of valuation may be found to be reflected in the recorded court decisions.

The capitalized income method of appraisal is frequently employed in a determination of "fair market value." This method involves the discounting of the estimated future earnings at the rate of

* A dissertation completed at the University of Wisconsin in 1955.

interest appropriate for the degree of risk involved. Where a minority block is involved, anticipated dividends are frequently a major consideration. This is quite proper as a minority block does not have control over the disposition of earnings. However, where a majority block is involved, dividends usually play only a secondary role and the major emphasis is on earnings.

If excess liquid assets are present which may be distributed without impairing the operating efficiency of the corporation and a majority block of stock is being appraised, the pro rata portion of these excess assets may be added to the value of the shares as determined by the capitalized income method of valuation in establishing the "fair market value" of the shares. This would not be a proper adjustment, however, if a minority block were being valued, as such a block would not have control over the disposition of the assets.

If in the prevailing situation it would be more reasonable to liquidate the corporation than to continue it as a going concern and a majority block is involved, the liquidating value less all reasonable expenses entailed with liquidation would approximate the "fair market value" of the shares. If a minority block is involved, the value per share may quite properly fall below the liquidating value per share as such a block would have little control over the liquidation of the corporation. Here account would have to be taken of the probability and the timing of liquidation as well as the amount which is anticipated will be realized upon liquidation.

Book value may not be entirely disregarded in a determination of "fair market value." An examination of the books may reveal the presence of excess liquid assets which may be drawn upon by the majority shareholder. An investigation of book value may also afford a clue as to the earnings which may properly be capitalized. Or, if the affairs of the company are in such a state as to preclude the adoption of any other method of valuation, the court may base its decision primarily on book value.

Where the shares of a family holding company are subject to valuation, the basis frequently employed by the courts is the quoted market value of the underlying securities. This approach is supported by the Internal Revenue Service on the ground that a sounder valuation for the shares may be obtained by utilizing the values which have been established in the market by a large number of people than by adopting the view of a single individual testifying to the value of the shares directly. However, it appears that if the taxpayer is ably represented, a value for the shares may be established which reflects the discounts at which the shares of comparable investment companies are selling in the market at the time.

STUDIES IN THE DISTRIBUTION OF TAX BURDENS BY INCOME GROUPS: A CRITIQUE*

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THE ACTIVITIES of government would seem in "normal" times to have reached the point where they will direct some 25 per cent of the nation's current income—the fraction will be much larger in wartime or in times of extended siege. It would seem that under these conditions, studies which made some quantitative measure of the distribution of the tax burden or of the combined distribution of the tax burden and government benefits would be worthwhile additions to the accumulation of economic knowledge.

The present thesis is a critical analysis of the work that has already been done in attempts to measure the distribution of tax burdens upon various income groups. It examines the theoretical basis upon which such studies can be erected and evaluates how closely the actual studies conform to a consistent theory.

While the results and methodology of certain foreign and other studies are drawn upon, the author confined his detailed criticism to four major efforts describing the burden of the American tax system. The author concentrated only upon the tax side of public finance, eschewing the distribution of governmental benefits, because he could find no consistently valid basis upon which the mass of government expenditure could be allocated. The major areas of government expenditure are presumed to be those where a common interest prevails, i.e., in more technical terms, the government intervenes wherever there is an interrelation of utility functions. If there is a divergence between private marginal benefits and social marginal benefits, the good may not be demanded at its socially desirable optimum amount unless the government furnishes it. Thus the individual allocation of benefits from such government activities as defense, police protection, and education are almost impossible to measure, and it is likely that even social welfare expenditures entail a considerable element of common utility. Because these joint utilities or benefits are incapable of being allocated to individuals or aggregate income groups, it may be permissible to consider the expenditure pattern as being fixed by forces independent of the complexion of

* A dissertation completed at Brown University, 1952.

the tax system and deal only with the distribution of the tax burden. While this is perhaps the only practicable procedure, it means that percentage of tax burden to income is in a sense always overstated because the invisible government services are left out of the income base. Thus the measures of tax burden should not be considered as absolute quantities; they are relative measures in the nature of ordinals not cardinals.

But even on the taxation side these studies are handicapped both by operational flaws and by implicit conceptual limitations. The major operational flaws may be listed under three headings, as follows:

1. *Incomplete data.*—The researcher in this field is handicapped by a lack of statistical material, especially material specifically broken down by income distribution. A good income distribution itself is very hard to obtain, especially when the problem arises of dealing with imputed income, income-in-kind, and capital gains.

2. *Inadequate data.*—Even where the statistics are reasonably complete, there is a difficulty in handling data as administrative usages and definitions were not the same as the rigorous definitions developed for theoretical analysis. A large part of the readily obtainable data derives from accounting and does not correspond to the categories of economic theory.

3. *Inconsistent theoretical models.*—It can be demonstrated that the long-run competitive model is the only one which gives consistent rules for allocating the various taxes in light of the data available. And as a matter of fact, it is soon observed that the implicit theoretical model underlying all these studies is indeed basically competitive. When, nevertheless, the authors of these studies stray from economic theory in attempts to make the allocation of a specific tax more "realistic," they usually wander into inconsistencies and into making the distribution of that tax a matter of individual judgment or proclivity. Unfortunately, though the long-run competitive model is the only practicable one, it is at any point of time more or less inconsistent with the real world.

Besides the operational flaws likely to creep into these studies, the usefulness of the results is further restricted by certain basic conceptual limitations. At least two of these are major. The first premise is that the over-all fiscal system is one that does not preclude full employment, or, putting it even more strongly, the analysis must proceed from the assumption of full employment. Furthermore, the market supply of factors must be held constant; that is, the complex of taxes and expenditures must be assumed to be such that total out-

put or production is not reduced by changes in the tax structure. Unfortunately many of these studies do not make these basic conceptual limitations explicit.

In spite of the many flaws and inherent limitations of "formal incidence" studies, properly prepared, they could be quite useful. They could be fairly valid indicators of the direction of tax pressures, and could be used to compare the distribution of such pressures over different time periods. Used with even more caution they might have some use in the comparison and analysis of the tax system of different countries. But the results of these studies must not be used in daring abandon and are certainly not to be relied on to the nearest percentile point.

THE CENTRALIZATION OF GOVERNMENTAL EXPENDITURES FOR EDUCATION AND HIGHWAYS IN NORTH CAROLINA, 1929–52

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THE PURPOSE of this study is to examine the centralization of governmental expenditures for education and highways in North Carolina to determine (1) why the state assumed responsibility for schools and roads, (2) the major features of the new arrangement, (3) the extent of further centralization in the past two decades, and (4) the results under the centralized arrangement.

Culminating a series of events dating back for many decades, the state assumed financial responsibility for the basic school term and all rural roads in 1931 and 1933. In the early forties state support of schools was extended to include the whole school program in a horizontal sense (nine months; twelve years), and then in 1949 the state began to grant aid for capital outlay.

The state began to appropriate money for the maintenance of city streets forming a part of the state highway system in 1935, but in 1951 the state assumed complete responsibility for these streets and, in addition, began to allocate a portion of the motor fuel tax receipts to municipalities to help finance non-system streets. The period since 1949 may aptly be termed the second phase in the centralization of expenditures.

The immediate explanation for the action of the early thirties is found in the economic conditions of the time. Local governments, having burdened themselves with additional responsibilities and large debts during the twenties, found it difficult or impossible to meet their obligations during this period of economic crisis. To assure a continuation of these services at a satisfactory level and to relieve the tax burden on property, the state had to grant aid of some type. Improved economy and efficiency were important considerations in the choice of state operation, especially with respect to roads.

Broadly, further centralization since the early thirties represents, in the case of schools, an attempt to equalize educational opportunities throughout the state and, in the case of roads, recognition of the fact that municipalities were treated unequally in 1931.

With respect to administration, expenditures for both schools and roads are centralized at the state level.

As for the results under centralization, the following are noted. (1) Expenditures, since the low of the depression, have increased more than seven-fold for each function, with centralization as a factor in the increase stronger in the case of roads. (2) Centralization is reflected in the lower proportion of funds supplied by local governments. (3) Defined as the ratio of services to cost, efficiency was higher in the case of both schools and roads immediately after the transfer of the functions to the state than before. (4) Service-cost ratios employed do not indicate that efficiency is higher now than before state control. (5) In the absence of state support, it is almost certain that many local governments would have been unable to continue their services at a satisfactory level. (6) Property has received very substantial relief from school and road taxes: only in Delaware and New Mexico do property taxes constitute a smaller proportion of school revenues; no property taxes are levied for rural roads except for the dwindling amount necessary to service local road debts. (7) The state has not assumed responsibility for these functions without control. (8) Compared with neighboring states, North Carolina experienced the smallest relative increase in total school expenditures (excluding debt retirement) per pupil between 1930 and 1950, but the greatest relative increase in total expenditures for highway capital outlay and maintenance between 1931 and 1952. (9) Interstate comparisons (North Carolina and neighboring states) give no conclusive evidence that efficiency is higher in the more centralized states. (10) There is a tendency for the poorer states to be more centralized and to exert the most effort. (11) To some degree, centralization breeds further centralization, and if past developments are indicative of those of the future still further centralization of expenditures may be expected.

ACTIVITIES OF STUDENT AFFILIATES

CONNECTICUT UNIVERSITY

The Connecticut chapter sponsored a nine-lecture series on securities and investments in the fall of 1955. The speakers were representatives of member firms of the New York Stock Exchange in the Hartford and New Haven areas. Their services were donated. The outline for the series was provided by the Investors Information Service of the New York Stock Exchange.

Through the sale of series subscriptions, a net of $583 was realized. One hundred and eighty-three dollars was set aside as a tax contingency fund. The remaining $400 became an investment fund administered by the students. It will be invested in securities listed on the New York Stock Exchange, with each year's group liquidating holdings and reinvesting the proceeds. The primary aim is education in the techniques and mechanics of securities investment. Any net proceeds will be used to purchase books on finance for the university library.

The initial stocks were chosen for yield. On March 28, 1956, a group from the club went to New York as guests of the New York Stock Exchange. After a tour of brokerage and off-lot houses, they saw their order for Greyhound and Union Tank Car completed on the floor of the Exchange.

In March the club also entertained Professor Lester V. Chandler jointly with the economics department. Professor Chandler spoke on "Recent Developments in Monetary Policy."

The final major meeting was held on April 16, when Mr. Albert J. Hettinger, Jr., of Lazard, Freres and Company spoke on international investment banking.

UNIVERSITY OF FLORIDA

The University of Florida chapter of the American Finance Association has been actively engaged in the procurement of guest speakers, arranging field trips, and contributing to the activities of the College of Business Administration. During the year, the Association was under the leadership of Wesley Evans and Charles M. Thompson. Guest speakers included Floyd M. Call, executive manager of the Florida Bankers Association; Joseph S. Guernsey, Orlando Federal Savings; William Huff, Beil and Huff of St. Petersburg; Buford Bowen, Merrill Lynch, Pierce, Fenner & Beane of Jacksonville; Fred McNulty, FBA Educational Foundation; Clarence Ayres, First National Bank of Gainesville.

The year's activities were highlighted by the panel sponsored by the Association for the annual "Business Day" of the business college, and the Association's annual banquet, held in conjunction with "Business Day." J. Carlisle Rogers, president of the First National Bank of Leesburg and a past president of the Florida Bankers Association, gave the main address. At the invitation of the Barnett National Bank, the members of the Finance Association journeyed to Jacksonville to observe and discuss the bank's operations with officers and department heads.

Seven members of the Association received scholarships from the Florida Bankers Association's Educational Foundation. They were John Hall, Robert Johnson, Frank Perritt, Clifforn McNulty, Jim Newman, Donald Tuttle, and Ben Griffith.

Elected officers for the 1956 fall semester include: William Hess, president; Robert Bannister, vice-president; William Crews, secretary; Jerry Kay, treasurer.

UNIVERSITY OF ILLINOIS

Prior to its March, 1956, affiliation with the American Finance Association, the University of Illinois chapter was active for many years under the name of the University Finance Club. The chapter now has twenty-eight members representing every field of commerce and a number of the other colleges found on our campus. The faculty advisers for the club are Mr. Alden Olson and Professor James Leonard, both of whom are in the finance area.

During the past year our meetings have included speakers from local financial institutions and from the faculty, group discussions, and a field trip to the Federal Reserve Bank of Chicago and the Midwest Stock Exchange. Some of our recent speakers include: Burt Hurd, partner, Hurd, Clegg & Co. of Champaign; Robet C. Humphrey, vice-president, Commercial National Bank of Peoria; A. McPherson, assistant cashier, The Champaign County Bank and Trust Co.; and Dean P. M. Van Arsdell and Professor H. K. Allen from our own faculty. One of the most successful meetings involved an open discussion of the auto industry which stimulated much interest. Our future plans include a number of joint meetings with other commerce associations.

Student officers for the past semester were: Charles Corn, president; Leonard Santow, vice-president; James Haider, secretary-treasurer; William Pickard, publicity.

INDIANA UNIVERSITY

The Graduate Finance Club of Indiana University has had a full and varied program of activities for the school year 1955–56.

Dr. John K. Langum, president of Business Economics, Inc., and professor of business administration at Indiana University, spoke to the club several times on topics of current interest in the field of finance.

At another meeting we enjoyed a discussion on the subject of the "Relationship of Bond and Stock Yields" by a panel composed of Messrs. E. E. Edwards, H. C. Sauvain, and N. L. Siverstein, all of whom are professors of finance at Indiana University.

In addition to the intellectual stimulus received, we were socially entertained on several occasions in the homes of some of our faculty and students; of course, all of us enjoyed the opportunity to eat a good meal.

We wish to thank Professor Sauvain for his sponsorship of the club. The officers for the year were Noman O. Miller, president; Donald G. Brown, vice-president; John E. Weidman, secretary-treasurer.

LOYOLA UNIVERSITY

Our organization at Loyola is a new student affiliate of the American Finance Association. We are trying to broaden and deepen our knowledge of the field of finance and spread that knowledge and interest among our fellow students. It is our policy to sponsor speakers, debates, and discussions for our own benefit and, we hope, for the university generally.

Among the topics that have been covered along this line are fund flow system of national accounts, growth stocks, the 1956 national income, and the use of economic trend lines in stock market forecasting.

We also believe that a few social affairs promote solidarity within the organization and co-operation between the members. This in turn makes us better able to take an active part in affairs within the university.

We hope that the end result of our endeavors along these lines will bring recognition to our organization, thereby facilitating our policy of spreading an interest in the field of finance and at the same time attracting new members.

On April 19, 1956, the following were elected to office: J. P. Riordan, president; E. B. Dillmann, vice-president; R. Nagle, secretary-treasurer.

MARQUETTE UNIVERSITY

A large crowd was in attendance as the Marquette University chapter of the American Finance Association opened the 1955–56 school year. After a short business meeting, Mr. Robert A. Sanderson, of the Arthur Anderson & Co. accounting firm, gave an informative presentation on the subject, "Control of Cash in a Business."

The second meeting of the academic year was held during December. At this meeting, Mr. Robert Stenger of the Milwaukee Co., a Milwaukee investment broker, explained the problems of "Underwriting a Security Issue."

Our regularly scheduled meetings were supplemented by two professional tours to Chicago. We visited the Federal Reserve Bank and the First National Bank of Chicago on one tour, and the Chicago Board of Trade, Midwest Stock Exchange, and the Continental Casualty Insurance Company on another.

At the third meeting of the year, Mr. Herman Peterson presented his views on "The Security Market Outlook." Mr. Peterson is vice-president of the Northwestern National Insurance Company and chairman of the Milwaukee Security Analysts.

During April, a joint meeting was held with the Milwaukee chapter of the AFA.

Our last scheduled event of the year will feature Mr. John Mayer, of the Securities Exchange Commission in Chicago.

The officers of the club are: John T. Esser, president; Denis J. Berry, vice-president and treasurer; Thomas Zwicker, secretary.

MIAMI UNIVERSITY

Under the incentive of Professor Frederick Amling of the finance department and Robert DeVore, senior finance major, the Miami Finance Club had its organizational meeting on December 7, 1955. Since that time, the club has been

granted a student affiliate charter by the American Finance Association, and has been approved by the Council of Deans of the university.

On March 8, 1956, Mr. Fred Danford, treasurer of the Armco Steel Corp., spoke to the group on "The Financing Program of Armco." On May 1, the members drove to Cincinnati and toured W. E. Hutton & Co., a brokerage firm. They also visited the Cincinnati Stock Exchange.

The officers who have been elected and will serve through the first semester of 1956–57 are: Ralph Gelder, president; Dal Tucker, vice-president; Bill Rupp, recording secretary; Don Lorenz, corresponding secretary; Dave Baker, treasurer.

UNIVERSITY OF MICHIGAN

The Finance Club at the University of Michigan was not in operation at all during the fall term. The students majoring in finance did not have the time nor inclination to reorganize the club after the exodus of a rather active group in June. However, this spring a few new students have reinvigorated the club and there will be at least three meetings in the spring semester.

A few weeks ago the club sponsored a discussion of the Ford Motor stock sale by Mr. A. C. Allen, resident vice-president of Blyth & Co., Inc., in Detroit. Some 150 students turned out for this meeting and many remained after the meeting to talk further with Mr. Allen at a coffee hour held in the student lounge.

On the day this is being written the club will have as guest speakers Mr. Herbert Hunter and Mr. Wagar Glas, both from Watling, Lerchen & Co. They are going to discuss the brokerage business in general but will emphasize its possibilities and problems for the graduates who might be interested in a career in that field. Mr. Hunter is a partner in the firm and Mr. Glas is local representative here in Ann Arbor.

Later the club hopes to arrange a seminar to introduce the finance students here to the opportunities in various branches of the financial area. Plans for this have not matured as yet. A field trip to one of the financial institutions in Detroit is also planned.

The newly elected officers of the Finance Club are: Richard Meyers, president; Ed Beresh, vice-president; Peter Hall, secretary; Hugh James, treasurer.

UNIVERSITY OF MINNESOTA

Activities of the University of Minnesota's Finance Club were geared to the dynamic changes taking place in the financial world. Studies, accented by top men in each field giving their views, were accomplished by the group in the areas of finance and insurance. Topics included: industrial insurance, estate planning, over-the-counter market, portfolio management, variable annuity, and the commodity market.

Perhaps the topic of most import pursued was that of the variable annuity question. It was concurred that should the variable annuity become widespread, the financial world will indeed take on a "new look."

In addition to purely academic interest, the group sponsored a queen candi-

date for "Miss Demand Curves" of the Business Day celebrations. Her curvilinear trend drew her a close second place.

Members of the club took time to bid Dr. J. W. Stehman, senior member of Minnesota's finance department, a fond farewell, giving him a token of their esteem and wishing him a rich and full retirement. Minnesota has suffered a real loss.

The year was climaxed by the club's annual "Social Evening," where good steaks and good fellowship were the main attractions.

Officers for the ensuing year were elected and are as follows: Roger Sherman, president; James Nelson, vice-president; Spencer Sokolowski, secretary-treasurer.

NORTHEASTERN UNIVERSITY

An active semester characterized the functions of the Northeastern University chapter of the American Finance Association. The major event was a tour of the New York Stock Exchange. Along with this tour were the visits to De Coppet & Doremus and Merrill Lynch, Pierce, Fenner & Beane, which provided an ideal background for a course in security analysis.

Our principal speakers of the term were Thomas Clark, Bell Telephone System; Clyde Cassidy, Savings Bank Life Insurance; Bruce Stott, Manager at Merrill Lynch, Pierce, Fenner & Beane; John Queenen, insurance agent at The Travelers Insurance Company. They explained the opportunities in their fields and also the mechanics of their positions.

A field trip to the Federal Reserve Bank of Boston as background for a course in money and banking was also taken.

Plans are being made for the chapter to have a new room in the Classroom Laboratory Building which will be completed by September.

NORTHWESTERN UNIVERSITY

Through the co-operation of the faculty, several all-day trips were arranged with Chicago firms that gave members of the Finance Club at Northwestern the opportunity to view at first hand the operation of these institutions.

A. G. Becker and Co. prepared a comprehensive schedule for our visit in February, including addresses by several of their officers, a tour of the office, and question and answer periods.

Another trip to the First National Bank of Chicago included talks by heads of their various departments, a tour through the bank, and the opportunity for men interested in specific fields to meet with officers of the bank for further information.

The members also toured the Federal Reserve Bank, Midwest Stock Exchange, and the Chicago Board of Trade. We have had several dinner meetings where speakers from the faculty and local firms have given us insight into the various fields of finance.

The new officers elected in March are: Gunvald O. Moen, president; Vernon M. Hallenbeck, vice-president; Terrence E. Comerford, secretary; Richard G. Muench, treasurer; Robert W. Moser, speaker selection chairman.

The membership of the chapter now stands at twenty-four and is sponsored by Dr. Bion B. Howard of the faculty.

UNIVERSITY OF PENNSYLVANIA

During the past year, the Finance Society has had a continued vigorous growth, becoming the largest and best attended professional society in the Wharton School. Students, members of the faculty, and the financial community of Philadelphia have found increasing interest in the wide number of activities and speakers that the society has presented.

The year's program included talks by leading men in the investment and commercial banking fields, real estate, savings and loan business, and other financial areas. The topics discussed bore on present problems and developments in the respective areas. Career conferences were held in commercial and investment banking with several leading members of the industry making up the panels. Several well-attended panel discussions, in which leading members of the faculty discussed their views on vital current economic problems were held. In addition, several field trips to brokerage houses, industrial firms, and the Federal Reserve Bank were made.

The growth of the society can best be attributed to its program of integrating the academic program with current developments, opinions, and opportunities in the financial world. The society acts as a workshop, offering the opportunity to gain useful information, meet conflicting views, and generally adds to interest in and understanding of the financial world.

RUTGERS UNIVERSITY

The student officers of the Rutgers affiliate enthusiastically report that they have had a productive and enjoyable year.

Visits were conducted to financial institutions in the metropolitan area, including the Federal Reserve Bank in New York, the New York and American Stock Exchanges, Dun & Bradstreet, Inc., Merrill Lynch, Pierce, Fenner & Beane, and banking institutions.

The club also had a number of meetings where speakers from financial institutions discussed current problems in the field of business finance.

One particularly stimulating activity of the Finance Club is the publication of an annual booklet under the title *Finance Digest,* which includes articles written by students on a variety of current topics in finance. The issue for the current year will be published in May, 1956, and represents the seventh volume in the series.

TEMPLE UNIVERSITY

The Temple University Finance Society expanded its membership this past year and had a number of stimulating meetings.

Fifty students visited the New York and American Stock Exchanges and the money museum of the Chase National Bank. The students observed trading on the floor, heard addresses by the director of education of the New York Exchange and by a representative of the American Stock Exchange. The field trip was sponsored by the Society in conjunction with the University Department of Finance.

To learn more about the career aspects of bank examining, the Society invited Joseph Campbell, assistant in charge of bank examination at the Philadelphia Federal Reserve Bank, to address the club on the highlights of his vocation. Mr. Campbell cited some of the difficulties encountered in his work and described some of the worthwhile and profitable features of his career.

The semester's activities were concluded with a tour of the Provident Trust Company of Philadelphia. Here we learned more about job opportunities in banking. Dr. Jackendoff served as sponsor this past year due to the illness of Dr. Chamberlin.

UNIVERSITY OF TEXAS

Membership in the University of Texas Chapter of the American Finance Association is open to all students interested in the fields of finance, insurance, and real estate. The regular meetings, which were held twice a month, were, for the most part, professional meetings and speakers were chosen from the academic, business, and government fields. The primary function of the program was to stimulate interest in the various fields of finance, insurance, and real estate. In addition to the regular meetings, the chapter conducted a field trip to Houston this semester for the purpose of visiting financial institutions and meeting with business representatives. The chapter also sponsored a few social functions.

UNIVERSITY OF WISCONSIN

During the academic year of 1955–56, the Finance Society of the University of Wisconsin held seven dinner meetings. The purpose of the meetings was to give the members a chance to hear and question leaders in various fields of finance. A listing of the speakers and their subjects was as follows: Professor Frank Graner, University of Wisconsin, "Openings in the Field of Finance"; Waldel Pike, Thomson & McKinnon, "The Brokerage Business"; Charles Jacobson, Wisconsin State Fund Investment Board, "The Workings of a Large Institutional Investment Program"; Roland Barnum, Merrill Lynch, Pierce, Fenner & Beane, and Mr. French, vice-president of Marshall & Ilsey Bank, "Aspects of the Banking and Brokerage Businesses"; Samuel M. Gofen, of Gofen & Glossberg, investment counsellors, "Two Schools of Thought"; William Tenney, Credit Union National Association, "Credit Unions and Their Role in Finance"; Douglas Fuller, vice-president of the Northern Trust Co., "The Present Economic Picture."

During the first semester, the Society took a trip to Chicago and visited the Northern Trust Company, the Chicago Board of Trade, and the Midwest Stock Exchange. As a finale to the second semester, the officers held a picnic for the members and the faculty.

The officers for the first semester were: Stanley Stitgen, president; Stuart Miller and Robert Gemeinhardt, vice-presidents; Hurtis McCrary, secretary. The second semester officers were: Richard Nigbor, president; John Lunda and Charles Forsberg, vice-presidents; Rawson Price, secretary.

BOOK REVIEWS

Business Finance

Corporate Reorganizations: Their Federal Tax Status. By ROBERT S. HOLZMAN. 2d ed.; New York: Ronald Press, 1955. Pp. xviii+490. $15.00.

This book is the second edition of Professor Holzman's work on the exposition and interpertation of the tax law governing corporate reorganizations. The publication at this time is timely since the Internal Revenue Code of 1954 made many major changes in this phase of corporation finance. New changes which affect particularly the modification of the treatment of stock dividends, exchanges of stock, redemption of stock to pay estate taxes, spin-offs, split-offs, split-ups, purchase of assets of a corporation by means of securities and assumption of liabilities, as well as the new interpretations in other areas of the subject are all treated in as complete, clear, and readable fashion as it is possible to do in a subject which seems perpetually confused as new developments in financial technique strain old precedents.

The author's development of his subject adopts the approach of the Revenue Code of 1954 and considers the law from the point of the corporation, the stockholder, the security holder, and any and all other parties concerned, many of whom, as the author points out, had absolutely nothing to do with planning the transaction. The book contains fifteen chapters, each of which is well outlined in a complete and usable table of contents. In addition, Appendix A contains a bibliography of readings on the 1954 code, a table containing the comparable sections of the 1939 and the 1954 codes, an index to the law, regulations, and rulings of the new code, and a list of cases cited. The first three chapters of the book are introductory in nature and form a basis for the practitioner and student alike to survey the problem as a whole.

Chapter 1 is essentially a reprint of the tax law Subchapter C of chapter 1, which is followed with a capsuled analysis of the reorganization sections. Chapter 2 contains a history of the reorganization concept, wisely not in great detail for it is not the purpose of the book, but sufficient in detail to give the reader a broad background in order to understand clearly the purpose of the several succeeding code provisions and the trend of the rulings and decisions. In a third chapter, definitions of key words important to an understanding of the code and rulings are treated. The author might have added a few which give students trouble such as spin-off and split-off which, though they are explained in chapter 8, are employed by him prior to that chapter.

Chapters 4 through 11 are developed from the headings of the several sections of the code and one of the attractive features of this work is its inclusion of the pertinent language of the statute or regulation prior to the author's discussion so that the reader is not constantly shifting from one book to another to match law with text.

Possibly because the author recognizes that a certain aura of suspicion sometimes surrounds the term "corporate reorganization" and because it has been often recognized by the courts that mere compliance with the form of the reorganization sections was not in itself sufficient to bring a situation within the

statute, a rather full chapter is devoted to a discussion of Form versus Substance. Along a similar theme, chapter 13 discusses the need for a strict compliance with the formalities prescribed in the statute.

This book is intended to be "as valuable to the highly experienced practitioner as to the new man in the field." I believe the attraction will, however, be greater for the accountant, lawyer, and business executive than it will be for the student and teacher. Certainly, and this is not a criticism in view of the author's objective, it is not a "teachable" book in that it has none of the teaching aids we have come to look for in a text, i.e., chapters divided into more or less convenient lengths for convenient assignment, questions for study and review, etc. It will therefore be a book for only the most advanced student and the experienced teacher.

HARRY M. KELLY

New York University

Raising Capital with Convertible Securities. By C. JAMES PILCHER. Ann Arbor, Mich.: University of Michigan Press, 1955. Pp. viii+153. $2.50.

This monograph, developed from the author's doctoral dissertation, constitutes a scholarly and comprehensive analysis of the financial functions of convertible covenants in senior security issues. General emphasis is on convertible financing of the 1933–52 period with some particular focus on the years 1948–52. Until completion of this study, textbooks and occasional articles in professional journals left unanswered, except on presumptive grounds, numerous basic questions relating to the extent of the use of convertibles and the underlying motivations. Dr. Pilcher undertakes both quantitative and qualitative analysis of these questions, primarily from the viewpoint of corporate financial management.

The author utilizes published financial data as sources for statistical comparisons of convertibles in total public offerings, convertibles in private placements, convertibles in total preferred stock offerings, and convertibles in total bond offerings. He also provides statistical evidence on such questions as average size of convertible issues relative to average size of total issues in both the bond and preferred stock categories, the relation of convertible offerings to total offerings by size groups, and the comparative use of convertibles by industry groups. A section of the study is devoted to the nature of the conversion option and related provisions, including those for protection against dilution, for redemption, and for sinking fund. These related covenants, as well as various means of setting conversion prices and the duration of the convertible privilege, are evaluated in light of financial purpose.

In a substantive chapter treating reasons for convertibles, Dr. Pilcher attaches fundamental importance to two: (1) enhancement of marketability of a senior security weak in some contractual aspect; (2) raising of residual equity capital. He adjudges the latter to be the major motivation after a direct survey of one hundred carefully selected corporations with recent convertible financing. While this conclusion breaks with what some would regard as traditional belief, the evidence is convincing. He also dispels the somewhat popular fancy that the vast majority of convertibles are low-quality securities. The author takes the position that the shortage of risk capital has not been the primary reason for the issuance of convertibles in sizeable amounts recently. Perhaps this position lacks

the convincing support he has provided for other conclusions. Prevalence of convertibles in earlier periods, as cited, seems insufficient to disprove the primacy of the shortage of risk capital in inducing the convertible covenant in the post-World War II years.

Without laborious legal detail, Dr. Pilcher outlines the transition of the law on the pre-emptive rights of stockholders, and relates this transition to the problem of privileged subscriptions to convertibles. He weighs the underlying financial considerations of privileged subscriptions versus public offerings of these securities. In an informative chapter on financial institutions as a potential market for convertibles, he presents evidence of significant interest in these hybrid issues on the part of insurance companies and investment trusts.

Dr. Pilcher contributes to the field of corporation finance a thorough, penetrating analysis to supplant a previously existing array of fairly plausible, yet unvalidated, presumptions with respect to the uses of convertible securities. He organizes his basic data carefully, and interprets these data clearly. His style of presentation is effective and interesting. Although the monograph is not voluminous, a well-prepared chapter of summary and conclusions will be helpful to persons severely pressed for reading time.

PAUL M. VAN ARSDELL

University of Illinois

Consumer Finance

Using Instalment Credit. By CLYDE WILLIAM PHELPS. Baltimore: Educational Division, Commercial Credit Co., 1955. Pp. 80. Gratis.

This is the fourth in a series of studies of consumer credit that Professor Phelps has been publishing under the auspices of the Commercial Credit Company. The first three of the studies—*The Role of the Sales Finance Companies in the American Economy* (1952), *Instalment Sales Financing: Its Services to the Dealer* (1953), and *Financing the Instalment Purchases of the American Family* (1954)—were designed especially for the use of faculty and students in colleges and universities; accordingly, they were heavily documented. By contrast, the latest study was prepared "with the needs of upper division senior high school students, and of the general reader, in mind," and, as is doubtless appropriate in such circumstances, it is sparing in the use of statistics, its charts and illustrations are simple, and it dispenses with footnotes entirely.

As one would expect, some of the material of the earlier publications is repeated here, although it is not necessarily treated in the same way; at any rate, one can say that the present volume is complete in itself, and the people for whom it has been designed should be in a position to profit from reading and studying it even though they may not be familiar with the earlier studies. The material is well organized, the style is easy, and a smooth transition is made from topic to topic. Starting with a discussion of the intelligent use of the instalment plan in buying, Professor Phelps goes on to describe how instalment purchases are financed, how the costs of instalment buying and borrowing can be computed and compared, and how the services of financing institutions in relation to their charges can be evaluated; he continues with a discussion of the problem of avoiding excessive debt, of the appropriate use of instalment loans, of means by which instalment buyers and borrowers can protect themselves, and

of conduct whereby the individual can develop and maintain a good credit standing; and he concludes with a brief examination of the effects of instalment buying on the economy.

Although Professor Phelps places great stress upon the advantages of the use of consumer credit, he succeeds in achieving a fair degree of balance in his appraisal by also pointing out the dangers, for both the individual and society, of its excessive use. His chapters on the avoidance of excessive debt, on means of consumer protection, and on the importance of developing a good credit reputation, should convince many readers of the common sense of proceeding cautiously in incurring obligations for the acquisition of consumer goods.

Especially well done is Professor Phelps' analysis of finance charges. He clearly shows that, in many instances, a reasonable return must be allowed for the many kinds of services that instalment sellers, sales finance companies, and lending institutions provide, aside from the return classifiable as pure interest. He indicates the nature of these services by presenting a list of twenty-four questions which, presumably, anybody thinking of acquiring consumer goods on a credit basis should ask. Included are questions such as these: "Is a definite policy of flexibility followed in making out contracts with regard to the size, number, frequency, and due dates of instalment payments so that the convenience of each customer may be best served?" "Does the source automatically extend to the car buyer the privilege of financing accessories, tires, motor overhauls, repairs, and parts on the instalment plan whenever he needs them?" Thus the reader learns that he cannot make a wise decision by simply comparing the dollar amounts or the rates of the finance charges that are quoted by different classes of sellers and financing institutions—that, on the contrary, he must weigh each quoted charge in relation to the kinds of services it pays for.

It would have been comforting had Professor Phelps used a designation other than "intellectuals" (as on pages 32 and 74) for people who tend to be unreasonable in their attitudes toward consumer credit. After all, many intellectuals, including Professor Phelps, seem to see much that is good in the use of such credit.

RAYMOND P. KENT

University of Notre Dame

Insurance

Questions and Answers on Insurance. By WILLIAM E. BOYD, JR., and CAMERON S. TOOLE. Englewood Cliffs, N.J.: Prentice-Hall, 1955. Pp. xii+468. $6.95.

In the second paragraph of the Preface the authors remark: "This book, which contains definitions, text material, questions and answers, various insurance policies and forms, as well as charts concerning license laws, should be helpful as a readily usable reference for licensed agents and brokers who seek a more thorough understanding of the coverage provided by many of the insurance policies they sell." Moreover, in the Preface, it is stated that this presentation of questions and answers on insurance "is undertaken in the belief that there is a need for a work that reviews the fundamental principles of many types of insurance and provides a source of study material for the individual preparing for qualification as an agent or broker."

This work consists of nine chapters, the titles of which are as follows: "Agents' and Brokers' Qualification and Licensing Laws"; "Fire and Allied Lines"; "Time Element Coverages"; "Inland Marine Insurance"; "Ocean Marine Insurance"; "Casualty and Indemnity Lines'; "Liability Lines"; "Workmen's Compensation Insurance"; and "Fidelity and Surety Bonds." These chapters are preceded by an Introduction, an excellent glossary of terms common to insurance, and a listing of titles and addresses of commissioners of insurance in the states, territories, and provinces. It can easily be recognized that the book deals almost entirely with that phase of insurance that is usually referred to as property and casualty insurance. Practically no consideration is given to life, health, and accident coverages.

As the title of this work indicates, it contains a large number of questions and answers listed under most of the chapter headings and many of the chapter subheads. These questions are pertinent and clearly stated, and their answers are direct and concisely written. An answer follows immediately after the question asked. The text material presented is readable, well organized, and clearly written. Moreover, the charts, policies, and forms, that are shown for purposes of illustrations, are applicable and helpful to the reader.

Because of its somewhat unique style of presentation, according to the reviewer's honest opinion, this book could not be used as a textbook for a regular course in property and casualty insurance. It can, however, serve as an excellent reference for all students of insurance. Although the authors clearly indicate that their book is designed chiefly to serve the purposes of potential and actual insurance agents and brokers, it certainly could benefit anyone interested in insurance. Members of the general public, as well as agents and brokers, are constantly seeking answers to questions of insurance. Libraries of colleges and universities, and those used by the public at large, should be adequately supplied with copies of this book for reference purposes. The authors have made a contribution to insurance literature and it should be made readily available.

FRED R. NIEHAUS

University of Colorado

A History of the Massachusetts Hospital Life Insurance Company. By GERALD T. WHITE. Cambridge: Harvard University Press, 1955. Pp. xvii+229. $5.00.

The history of the Massachusetts Hospital Life Insurance Company is the history of a unique financial institution. It was unique when it started operations in 1823, and today, operating as an open-end investment company, it still occupies a singular position in its field. Its name belies its true nature. As the author states, ". . . it was conceived primarily as a life insurance company, but most readers will be more interested in noting its pioneering relationship to the modern trust company and the modern investment company. . . ." Its charter granted in 1818 ranks it as the second life insurance company to be established in the United States. Life insurance was a negligible part of its business from the start. The last life insurance policy was sold in 1867, and the sale of annuities continued on a minor scale to 1941.

This small book, the nineteenth volume of the "Harvard Studies in Business History," is a very readable and interesting history of what was in its early days

the largest financial institution in New England. The 167 pages of text are divided into seven chapters. After a short introduction, the remaining chapters detail the company history in chronological order. The first section of each chapter is devoted for the most part to the administrators and the administration of the company. The author traces in much detail the relationship of the officers and directors to their predecessors and the "first families" of Boston. It is these sections of the book replete with names that will be of least interest to the student of finance. The remainder of each of the chapters is devoted to a description of the operations of the business and the investment policy during the period.

The power to accept deposits in trust was included in the charter of the company and from the beginning became the principal line of business. Up to that time the trust function had been performed by private individual trustees. The similarity of the Massachusetts Hospital Life Insurance Company to present-day investment companies arises from the provisions of the trust contracts having to do with investment of the trust funds and the sharing of earnings. All monies of the company, trust deposits, shareholders' capital, and life insurance and annuity reserves were invested as a common fund in mortgages, loans, and securities. The individual depositors shared in the income from investments on the same basis as the stockholder after the deduction of the annual service charge or management fee. Principal could be repaid in assets or in cash, and if in cash, the company could make reasonable allowance for changes in the price of the common property. In actual practice all payments were made in cash, and depositors were paid no more or less than original principal plus interest until difficulties were encountered in the 1930's.

To one interested in finance the sections of the book dealing with investment policy will be of greatest interest. The author traces in some detail the changes in investment policy and the reasons therefore. The company weathered the panics and depressions of the nineteenth century and first quarter of the twentieth century with little effect on either depositors or stockholders. However, heavy losses sustained largely in its mortgage portfolio in the 1930's and continuing into the 1940's coupled with a continuing decline in business culminated in a complete reorganization in 1947 and the formation of the Massachusetts Life Fund, an open-end mutual investment company having most of the characteristics of other mutual funds. Trust deposits in the old company were exchanged into certificates of the Fund.

An exemption granted by the SEC under the Investment Company Act of 1940 permitted the wide variability of terms of the old trust deposits to continue in the certificates of the Fund. Distribution of earnings can be monthly, quarterly, semiannually, or annually as the certificate holder chooses, claimant to income and claimant to principal may be two different persons, or numerous other variations permitted by a trust agreement may be specified. The Massachusetts Life Fund greatly resembles the common trust funds maintained today by many trust companies in which the assets of numerous trust accounts having variable provisions are commingled and invested in a common fund.

A shortcoming of the book is the lack of analytical data that will permit comparison with similar institutions. Although it is clear that the company was well managed from the standpoint of safety for its depositors (until relatively recently), it is not clear how the depositors fared incomewise as compared to the depositors in savings banks and other trust institutions, and only limited references

are made to investment policies of competitors. Even less information is provided on the investment experience of the stockholders. Annual per share dividends paid are included chapter by chapter, but the reader is left to compute the earnings per share and rate of return on the investment from data provided in an Appendix. In disposing of shares all stockholders had first to offer their stock to the directors but no information is included on whether the seller ever received more or less than par.

BION B. HOWARD

Northwestern University

International Finance

Foreign Investment and Taxation. By E. R. BARLOW and IRA T. WENDER. New York: Prentice-Hall, 1955. Pp. xxv+481. $15.00.

This study of foreign investment and taxation is concerned largely with direct foreign investment by American concerns. As the title indicates, the authors have given special attention to the influence of taxation of American investment abroad by the United States government, doubtless because there have been numerous suggestions for stimulating foreign investment through tax reduction.

The study is exhaustive and up-to-date. The four chapters of Part I are concerned with past and present experience of foreign investors. Part II deals with the obstacles and impediments to foreign investment. After summarizing the conclusions of previous studies of the problem, the Commerce Department survey is treated in detail.

In Part III the authors set forth the results of a survey of their own which consisted of interviews with executives of 40 business firms. The interviews were for the purpose of determining the experience of the executives with respect to foreign investment and their policies in that connection.

Part IV deals with United States taxation of foreign income and analyzes the incentive effects of tax reduction or elimination, as well as the cost to the government of the same. The final chapter in this section is devoted to the special recommendation of the authors for the stimulation of foreign investment.

Following the text are 130 pages of appendixes containing the substance of the interviews with some of the companies contacted in the field research program of the authors, the Department of Commerce questionnaire, and other pertinent data.

It is impossible, in the space at hand, to do more than present the general impression gained from a perusal of this impressive study. The one thing that stands out most clearly is that taxation is not nearly so important a consideration, in the minds of executives, in connection with foreign investment as are certain other factors. Lack of currency convertibility appears to be the most potent deterrent to foreign investment, with financial instability of foreign governments, fear of expropriation, etc., all coming ahead of taxation as deterrents.

In spite of this, the authors feel that something can be done, from a taxation standpoint, to stimulate foreign investment. To this end, they recommend an act permitting the establishment of United States Foreign Business Corporations. "These corporations would be permitted to carry on all types of foreign activities including operating abroad directly, holding the stock of operating foreign subsidiaries, and exporting. These corporations would pay United States taxes on

their earnings only when earnings were distributed. No intercorporate dividends tax would be imposed on corporate shareholders receiving a distribution from a United States Foreign Business Corporation. A corporation which wished to organize its foreign business activities under a United States Foreign Business Corporation would be permitted to transfer its existing foreign holdings in a tax-free reorganization to a United States Foreign Business Corporation" (p. 315).

While more extensive convertibility and more stable foreign governments (in some instances) would do most in stimulating foreign direct investment, some stimulation might well be attained by adoption of the authors' proposal. It is distinctly worth a try.

FREDERICK A. BRADFORD

Lehigh University

Capital Formation and Foreign Investment in Underdeveloped Areas. By CHARLES WOLF, JR., and SIDNEY C. SUFRIN. Syracuse, N.Y.: Syracuse University Press, 1955. Pp. 134.

This study, supported by the Ford Foundation, is a badly needed addition to the rapidly growing literature on underdeveloped countries. The book is divided into two parts: the first presents an analysis of the research and program possibilities; the second gives an annotated bibliography and the results of a survey of ongoing work in the area.

The analytical part, though somewhat cursory, is excellent. It provides students of the problem with a unique opportunity to compare notes with other researchers and to check their thinking against the penetrating insights of the authors. The major problems of economic development are defined as: (1) entrepreneurship and the demand for capital, (2) technological alternatives and the optimum use of capital, and (3) foreign investment and capital formation.

The analysis of research needs and program possibilities related to entrepreneurship and the demand for capital is outstanding. This problem area, perhaps more than any other, has been shrouded in a mist of "interdisciplinary" argument. The authors do a first-rate job of piercing the fog with incisive remarks regarding differential rates of growth, possibilities of internal capital formation, and resistance to cultural change. Of special interest is the suggestion that man-made institutions are themselves agents of social change.

The discussion of the optimum use of capital is also on a high level. The authors attach a great deal of hope to the application of the input-output analysis and linear programing to the problems of underdeveloped areas, though they point out the present lack of statistical information.

In the developing countries with their pecuniary external economics, inflationary expectations, and inelastic managerial supply functions, the market mechanism is often decried as an inadequate guide to the allocation of limited capital resources. Yet, beyond vague generalities about equating social product at the margin, little has been done to define an alternative allocative mechanism. It is to be regretted that Wolf and Sufrin have omitted any explicit discussion of this, perhaps the fundamental problem of "directed" economic growth.

The discussion of foreign investment and capital formation, although brief, is very competent, and one could only wish that the authors had given recognition to the possibility of equity portfolio investment as the type of capital inflow that

would avoid the shortcomings of direct investment on one hand and loans and grants on the other.

The second part of the book does little more than point out the need for a fuller bibliography and a more ample discussion of the research and projects undertaken. The sources are heavily weighted by the complete list of the publications of the international organizations, but the treatment of other works in the field is rather sketchy. Many significant books and articles have been omitted, and some works of rather doubtful merit have been included. On the other hand, any selection is notoriously arbitrary, and one could only hope that the admirable pattern set by the authors will be followed by a similar, more extensive bibliography that could perhaps include doctoral theses and such unpublished reports as those issued by the Center for International Studies at M.I.T.

The results of the survey conducted among researchers in various countries are interesting and suggestive. Perhaps the most startling conclusion reached by the authors is that no one seems to do any research on the ways and means of inducing purposive social and institutional change (p. 123). This is rather astonishing when one reflects on the numerous suggestions and proposals advanced in American journals in the fields of collective bargaining, money and banking, and taxation. Perhaps this reluctance to employ "manipulative economics" stems from the suspicion that some of the proposals may actually be put to test.

ALEK A. ROZENTAL

University of Minnesota

Investments

Introduction to Investments. By JOHN C. CLENDENIN. 2d ed. New York: McGraw-Hill, 1955. Pp. vi+657. $6.50.

This second edition of an investments textbook is impressive for its common sense approach and for its high quality of workmanship throughout. Although the author lays down many rules and considerations in numerical order, he makes up for such abstractions by clear organization of his material and by citing many pertinent illustrations from his business experience. He is not only a professor of finance but also a research consultant to the Los Angeles Stock Exchange.

The approach is from the personal or family viewpoint rather than from that of a trust, investment company or insurance company, or from a firm seeking to market its securities. It is this view that interests the vast majority who study investments. Since it is market prices which primarily affect the management of their investments, the author gives much attention to explaining sound methods for evaluating investment assets on the presumption that in the long run the securities of companies with sound assets will prosper. He candidly admits that something important had to be omitted in a book as ambitious in its coverage as this one, and he omitted financial history. This is unfortunate, for history, well interpreted, is one of the best ways of giving perspective to any subject and especially to this one. Some of the elementary descriptive material of financial institutions might better have been left out.

The term investments is interpreted broadly. Investments are not simply stocks and bonds but the whole gamut of things that a person who saves may

put his money in. For example, a full investment picture for any family will take into account their holdings in life insurance, in real estate (notably their home), and in savings accounts. The only item seemingly conspicuous for its omission is pensions, which, like taxes, will certainly influence a family's investment program.

The book begins with a chapter on investment objectives in which the author asks which of four basic risks (business, market, money rate, or price level) the investor is willing to face and which he seeks to avoid. He goes on to basic determinants of investment values such as yield, fashions in stocks, etc. There follow a series of searching chapters on the nature of corporations, of common and preferred stocks, and of bonds, and on what happens to securities owners when a corporation fails. There are detailed chapters on stock exchange operations and on sources of investment information. This leads directly to an even longer section analyzing corporate securities. The chapter on the use of financial reports should really help the amateur. Six chapters take up the peculiar characteristics of bank stocks, utility securities, railroad securities, and others.

The author discusses government securities and emphasizes the opportunities for tax savings in municipal bonds. Finally he bluntly warns the investor against most foreign securities except those of Canada. Professor Clendenin is not afraid to cite what he considers practical rule-of-thumb measurements in judging security values, or to voice qualified approval of such devices as dollar averaging or the Dow Jones system. His candor throughout is refreshing and helpful.

Yet the reader comes away with a feeling of dismay at how much he must do to be called a careful investor. The book unconsciously is a good advertisement for the investment trust for the small investor and for the investment counselor for the large investor. Indeed Professor Clendenin frequently urges resort to one or the other. Under the circumstances, he might perhaps have devoted more space than he does on how to choose them wisely.

DONALD L. KEMMERER

University of Illinois

A Study of Saving in the United States. By RAYMOND W. GOLDSMITH. Princeton, N.J.: Princeton University Press, 1955. Vol. I, *Introduction; Tables of Annual Estimates of Saving 1897 to 1949.* Pp. xxx+1,138. Vol. II, *Nature and Derivation of Annual Estimates of Saving 1897 to 1949.* Pp. xxiv+632. $30.00.

The entire study by Dr. Goldsmith consists of three volumes of which the third will probably be in print by the time this review appears. The third volume will consist of four supplementary studies, two by Dr. Goldsmith, one by Dr. Dorothy Brady, and one by Dr. Horst Mendershausen. This study of saving was carried on by means of a grant from the Life Insurance Association of America. Six economists from outside the life insurance business and three representatives of the life companies constituted an advisory committee for the study.

These first two volumes present detailed compilation of the statistics of saving in this country for approximately the first half of the twentieth century. The work constitutes a major contribution to the historical social accounts of the nation. Appraisal of the work depends upon evaluation of the general framework of social accounts which we have developed. Within that framework this study

is a major *tour de force*. The mere bulk of the tables produced is a testimony to the enormous labor involved. No effort has been spared to develop in meticulous detail every important constituent element of these accounts.

Probably no one else could have carried out this work with such success. It reflects not only the two or three years spent directly upon it but many years of previous work in the field dating back to the author's work on the American banking system in the early nineteen thirties, to his institution of a current series on saving while at the Securities and Exchange Commission in the mid-thirties, and to his studies for the Temporary National Economic Committee at the end of the decade.

To the extent that series of *ex post* saving data, integrated with the social accounts as they now exist, are of value in economic analysis, the Goldsmith study is fundamental and invaluable. Any reservations pertain, not in any considerable measure to the execution of the study as conceived, but rather to the value and advisability of data on saving which are so committed to the existing system of social accounts.

There are a number of concepts of "saving" of value in economic analysis. Goldsmith does not give much attention to the problem of what concepts of saving will best meet the various needs of economic analysis. Both this study and the social accounts in general make rather literal use of the customary business accounts. There may be question whether the customary business accounts meet the needs of business. But, be that as it may, we need to be on our guard as to their usefulness for general economic analysis.

As one case in point we may consider capital gains, particularly unrealized capital gains. After brief allusion is made to this subject in the Goldsmith study, capital gains are rigorously excluded from all the time series. It is the feeling of this reviewer that time series on "saving" which take no account of capital gains are of limited value. It may be replied that everything cannot be done at once, and that he who thinks capital gains are significant can make appropriate adjustments in the basic series presented. But no one else would be so well equipped as Goldsmith to make the judgments necessary for the adjustments.

Elimination of capital gains from these data seems to be especially regrettable in view of the sweep of history treated by this study. Three particular cases may illustrate the limited usefulness of saving data which ignore unrealized capital gains. Goldsmith finds that "farmers in the two decades ending with World War I borrowed so much that, as a group, they showed no saving through tangible assets." It may be that figures of this kind obscure rather than illuminate. This period was the great heydey of American agriculture. Judged by the market price of their assets, farmers were rapidly becoming wealthier. It mattered little to the farmers whether their wealth grew because they sold more hogs at a profit or because their land rose in value. They did not keep books or appraise their well-being in terms of rules which require assets to be valued at original cost, and there is no purpose in writing history as though they did.

A second case in point is the rise in equity of home owners during the past half-century. Throughout the entire period, except for the nineteen thirties, an important element of demand has been the rise in equities of home owners from increases in the value of their houses. When prices of houses fell in the early 1930's and stayed below the initial cost for a decade, equities declined and a continuous depressant was exercised on the housing market. Finally, it seems to this reviewer that we will not make much progress in analyzing consumer de-

mand if we ignore the increase in individuals' net worth which results from increases in the prices of common stocks such as we have had recently.

Goldsmith treats the acquisition of consumer durable goods as a positive element of his "basic" saving series. If there is to be such a thing as a basic series entitled "saving," which is to be reconciled with a concept entitled "wealth" or "net worth," it does seem most reasonable and useful that durable consumer goods should be included. The extent to which they will enter into saving depends in part on the depreciation rate which is adopted. With respect to automobiles Goldsmith uses the market rate of depreciation while on other goods he assumes a straight-line depreciation over their "actual useful life." If market price is considered significant with respect to automobiles, it is difficult to understand why other durable goods, which depreciate even more rapidly in the market, should be allocated a more gradual and longer depreciation. While agreeing in general with Goldsmith's decision to include consumer durables, this reviewer believes that their importance is generally overstated through understating depreciation.

In his Foreword, Dr. Winfield Riefler has indicated that "due to time and budget limitations, it has proved necessary for Dr. Goldsmith to reduce greatly the original plans for analysis of the data." More attention might well have been given, in advance of the statistical work, to the uses which the data might serve. For example, one may wish to concentrate attention on those elements of saving which are not co-ordinated with a decision of the saver to invest, on that part of income not spent by the receiver for goods and services and therefore requiring an independent investor, supplemented by the flow of funds out of claims and into tangible assets, and vice versa.

Funds derived from the sale of tangible assets and not invested in other assets are as much of a "saving problem," as much in need of independent investors, as is income not spent by the recipient. But it would certainly be expecting too much of Goldsmith to ask that proceeds of all sales of real capital be encompassed under the rubric of "saving." This is the province of the "flow of funds" analysis, but this limitation may point to the conclusion that any concept of "saving" as constituted in the social accounts is of limited value for economic analysis.

We wander still further afield from pertinent criticisms of Goldsmith's figures when we note that they are *ex post* data and question what light they throw on the forces determining the economic process. The rate of saving as presented in this study is the result of the economic process rather than the cause. Saving as cause is *ex ante* saving, i.e., propensity to save. While the *ex post* saving data are, in part, the result of and evidence of *ex ante* saving schedules, they are also the result of many other factors. The propensities to save have an effect on the actual saving data but in no simple, determinable manner. There is no evidence that the saving data throw more light on the *ex ante* saving schedules than do other resultants such as employment and production. Most simply conceived, *ex ante* saving matched by an equal *ex ante* investment will permit such a flow of income that *ex post* saving will be equal to *ex ante* saving. The actual saving figures indicate one point on the *ex ante* saving curve but they do not tell us the course of the curve and that is the important saving concept as a causal factor in the economic process.

One outstanding example of the inadequacy of the saving data is demand deposits. Increased holdings of demand deposits reflect not the desire of the public to increase its holdings but the decisions of borrowers and bankers. That volume

of bank deposits which is created is *ex post* saved but, as a statistic, it throws no significant light on "saving" as a causal force.

These remarks regarding what Goldsmith has not provided, and what, possibly, no one can provide, should in no way detract from appreciation of his accomplishments. But our chief duty is to recognize the limitations of what we have and lay plans for development of economic concepts and information which will better meet our needs.

HOMER JONES

Board of Governors of the Federal Reserve System

Investor's Handbook. By JACOB O. KAMM. Cleveland: World Publishing Co., 1955. Pp. xiii+295. $4.95.

This book consists of fifty-six chapters, mostly quite short, each dealing with a term or a concept investors sooner or later meet. The jacket claim that information is provided on any one of a thousand facts has not been verified by this reviewer, but a reading of the book makes it plausible. The style of writing is commendable: clear and readable. The author has therefore successfully accomplished the preparation of an informative book, which should be useful in many libraries and to many teachers.

This handbook does not tell the reader what to do any more than the guidebook tells the traveler where to go. It is intended to provide definitions and descriptions, which it does, and it adds a considerable amount of advice, mostly on thoroughness. The reader who expects to find clear and usable directions as to what to do with his cash or his investments will therefore be disappointed; he either must do an amount of analysis which is impossible, or make up his mind on an investment with inadequate analysis, or pick rather blindly among an array of types of advisers or helpers. This is an inescapable condition of a reference book.

Simplification is a virtue that usually has the disadvantage of lack of completeness and insufficient qualifications, and Professor Kamm's simplification does not escape this defect. For example, when he declares on page 3 that "Every American ought to try to be an investor in corporate securities, regardless of how small the investment is . . ." he doesn't say, however, that a reasonable savings amount for emergencies, and a fair amount of life insurance for dependents ought to be in existence first.

DONALD B. WOODWARD

New York City

Capital Formation and Economic Growth. By UNIVERSITIES–NATIONAL BUREAU COMMITTEE FOR ECONOMIC RESEARCH. Princeton, N.J.: Princeton University Press, 1955. Pp. xiii+677. $12.00.

The growing disparity between the boom levels of economic welfare currently prevailing in the United States and Western Europe and the politically intolerable levels of many of the underdeveloped countries of Asia, Africa, and South America presents serious problems of economic, business, and government policies to the non-Communist world.

This volume is largely a symposium in which the thoughts, and after-thoughts, of a distinguished group of economists, historians, and one sociologist on the determinants of capital formation and the varying relation between capital formation and economic well-being are presented. In broad outline, the studies are fitted to the concept that the process of capital formation involves three distinct, if interdependent, activities. In the words of Abramovitz (who edited the work):

"One is *saving*, the activity by which claims to resources, which might be exercised in favor of current consumption, are set aside and so become available for other purposes. A second is *finance*, the activity by which claims to resources are either assembled from among those released by domestic saving, or obtained from abroad, or specially created, usually as bank deposits or notes, and then placed in the hands of investors. The third is *investment* itself, the activity by which resources are actually committed to the production of capital goods. The volume of capital formation depends on the intensity and efficiency with which these activities are carried on."

Any serious student of either the theory or the practice of *saving*, *finance*, or *investment* will find sound underpinning in these papers for as much further work as he may care to do. And for the scholar concerned with the search for a general theory of economic growth, the volume will prove quite worth while, although the authors frankly admit that, in this respect, little more than a beginning is accomplished. Nonetheless, the comparisons of the conditions of capital formation and economic growth in various countries represent a "giant" step forward.

Structurally, in addition to a painstaking and illuminating Preface by Professor Abramovitz, the book is divided into six parts: "Sources and Channels of Finance in Capitalist Countries"; "Savings and Finance in the Soviet Union"; "The Influence of Enterprise and Business Organization in Advanced Countries"; "The Influence of Enterprise and Business Organization in Underdeveloped Countries"; "Technological Progress and Investment"; and, "General Theoretical Approaches." Happily, these headings are descriptive of what is contained in the volume!

Summarizing, this is another of the pioneering and synthesizing efforts of the National Bureau of Economic Research. As in the past, it, too, represents a significant contribution to a better understanding of economic reality. While, in the spirit of some reviewers, small and captious criticisms could be made, the virtues of this effort by outstanding scholars so far outweigh any possible criticism, that none will be essayed. In fact, quite to the contrary, the following explanation of the flexibility and adaptability of the American economy is quoted from page 381 with high approval (for the benefit of any who might have secret misgivings as to the outcome of the long struggle between communism and capitalism!): ". . . there was 'built into' the American society a set of institutions or cultural values that accepted change as normal and rewarded the individuals who brought it about." This statement of the time-tested, well-worn, American key to economic growth should be carefully pondered by the political revolutionaries on the other side of the Iron Curtain!

RAYMOND RODGERS

New York University

Money and Banking

Flow of Funds in the United States, 1939–1953. By BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM. Washington, D.C., 1955. Pp. xxii+390. $2.75 (paper).

In our generation we have witnessed the development of a number of tools of analysis which have enriched our understanding of the functioning and operation of the economy. To the development of annual estimates of national income, pioneered by Wesley Mitchell and Simon Kuznets through the National Bureau of Economic Research, and the annual Balance of Payments estimates, developed by John Williams in the Harvard *Review of Economic Statistics,* must now be added periodic estimates of money-flows, originated by Morris Copeland and subsequently refined and expanded by the Federal Reserve.[1]

Wesley Mitchell is said to have remarked that the money-flows system might be as popular with economists of the next generation as GNP is with economists of this generation. Certainly for students of finance this is likely to prove true, for here is a technique which is already enriching our knowledge of flows of funds through the investment markets into the economy and, conversely, of the flows of savings into investment. Here is an indispensable tool for the analysis of problems of debt management and, in due course, when relatively firm data are brought out on a current basis, for the determination of monetary policy by central banking authorities.

In 1944, the National Bureau invited Morris A. Copeland of Cornell to direct an exploratory project to determine what could be done to provide a fuller statistical picture of the money circuit. There resulted an extraordinary report, *A Study of Moneyflows in the United States,* published by the National Bureau in 1952. This study presented annual estimates of money-flows and of cash and related balances for the United States from 1936 through 1942 and attempted a tentative interpretation of these quantitative findings. The estimates took the form of a set of interlocking sector and national accounts. One of Professor Copeland's assistants at the Bureau, Daniel Brill, went on to head a small unit at the Board of Governors of the Federal Reserve System engaged in a continuation study of Copeland's pioneer work.

Copeland's exploratory study fully demonstrated that a national accounting record of the economy's flow of funds was feasible. Accordingly the Board of Governors, in view of its need for this kind of analytic framework, instructed its staff to develop a national flow-of-funds accounting system which might be kept up-to-date on a regular basis. The result is embodied in the volume under review which presents a system of national accounts for the years 1939–53 inclusive. Figures for the year 1954 appeared in the October, 1955, *Federal Reserve Bulletin* and it is the present intention of the Federal Reserve to publish not only annual but also quarterly flow-of-funds statistics.

The flow-of-funds system of national accounts encompasses all transactions in the economy that are effected by a transfer of credit and/or money. The boundaries of the system extend beyond the measurement of national output alone. Since flows of funds arise in transfer of existing assets as well as in purchases

1. One should perhaps include a third technique, that of input-output interrelationships among major industrial groups, developed principally by Wassily Leontieff of Harvard. Additionally, linear programing and econometric model building may be added.

and sales of current production, the accounts include measures of transactions in land, existing homes, and used automobiles in addition to measures of purchases and sales of new homes and new automobiles. Flows of funds also arise out of shifts in composition of portfolios. Therefore transactions in mortgages, securities, trade credit, and other financial instruments, as well as changes in cash balances, are measured in this all inclusive system, which is more comprehensive than the GNP accounts.

In the flow-of-funds system, records of all money and credit flows are organized into detailed statements of the sources and uses of funds for each of ten major sectors into which the economy is divided. The sector accounts can be visualized as a set of interlocking balance of payments statements, each of which records the sector's purchases and sales of commodities and services, its credit and capital outflows and inflows, and the changes in its monetary balances.

Each transaction is reflected in at least four entries in the accounts of participating sectors; there are two non-financial and two financial entries. Total transactions of the individual sectors are classified into twelve non-financial and nine financial categories. These transaction categories are carried through all sector accounts consistently so that each sector's contribution to particular phases of economic activity can be traced. In addition to being recorded in the sector accounts, transactions in each category are summarized in transactions accounts. Summary tables for each year, showing both sector and transactions totals, are included in the published study.

While the Federal Reserve study is concerned almost entirely with methodological problems of a statistical and accounting nature involved in the construction of the accounts, and says almost nothing about the use and interpretation of the data, there are enough insights gained in the reading both to awe one with the grandiosity of the integration and to excite one with the real possibilities of potential usefulness of the data for economic and financial analysis. Clearly they provide the basis for many different investigations of the functioning of the economy.

They make it possible, for example, to observe, with a bird's-eye view, changing patterns in utilization of credit and capital market as fluctuations in production and consumption occur. The accounts indicate the financial channels and instruments used by each sector in accumulating financial assets and in financing expenditures. They should provide a powerful tool in the analysis of savings and investment. The organization of the accounts facilitates the analysis of savings, of the forms that savings take, and of the institutional channels through which savings flow. Velocity analysis and other aspects of the role of money and credit in our economy will be aided. In particular, relationships of the banking system to the rest of the economy through changes in bank credit and the money supply can be studied in much more comprehensive fashion than before by analyzing each sector's sources and uses of funds. The scope of the accounts and their structural interdependence are designed to facilitate inquiry into how financial factors influence, and are influenced by, other economic developments. By providing new and useful insights into the way our economy operates, the flow-of-funds accounts will contribute to the process of policy making.

JEROME B. COHEN

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The Money Market and Its Institutions. By MARCUS NADLER, SIPA HELLER, and SAMUEL S. SHIPMAN. New York: Ronald Press, 1955. Pp. viii+323. $6.00.

According to the authors, as stated in the Preface, "the purpose of this book is to examine the powers of the monetary authorities and the mechanism of creating bank reserves and deposits, and to analyze and interpret the statements and statistical data issued by governmental agencies and private organizations concerned with money and credit." A reading of this book will show that the authors reached their objectives.

The first seven chapters describe the fundamental operations of the money market and its institutions, with special emphasis on the role of the Federal Reserve System, the Treasury, and the commercial banks. Chapters 8, 9, and 10 provide a detailed description and a critical evaluation of the debt and credit management policies followed by the Federal Reserve and Treasury authorities in the postwar years. Chapter 11 discusses the position of New York as an international financial center. At the end of the book there is an excellent bibliography of books, United States government publications, reports, pamphlets, bulletins, documents, periodicals, and newspapers pertaining to money, credit, financial institutions, and related subjects.

Unfortunately, in a country like the United States, much ignorance and misunderstanding is displayed by many individuals concerning such subjects as money, monetary systems, monetary policies, and financial institutions. The mere mention of such terms as money market, inflation, deflation, discount rates, foreign exchange, margin requirements for security transactions, or open-market operations by the Federal Reserve Banks causes many of our citizens to develop mental blocks. To repeat, this state of affairs is unfortunate, because if there ever was a time when the people of this country should know about such matters, it is at present. It is highly probable that during the next few years much of their financial success or failure, or happiness or sorrow, will be determined by monetary and financial developments in this country and throughout the world. More knowledge and a better understanding on the part of these people might help guide these developments in accordance with sound financial policies and practices.

A careful reading of this book written by Nadler, Heller, and Shipman certainly would augment this knowledge and understanding of finance and economics needed by many of our people. The reader would be given a clear conception of the structure and operation of the money market and our financial institutions. The book is very readable and can easily be comprehended by laymen. One need not be a trained economist to grasp its significance or meaning. The material in the book is well organized and clearly presented.

Although this book can be read with benefit by the general public, it could be used as a basic textbook for certain college or university classes. The instructor of such a class, however, would want to make assignments in supplementary books, periodicals, or allied publications pertaining to money, credit, and related subjects of finance. The use of the book by itself, probably, would make a course too simple and easy for college students.

One might find some fault with the authors for the last chapter entitled, "New York as an International Financial Center." This chapter might have been more in harmony with the rest of the book had it been devoted to describing the significance of the United States in international finance. This possible oversight, however, is no serious criticism of the book.

FRED R. NIEHAUS

University of Colorado

Policies To Combat Depression. By UNIVERSITIES–NATIONAL BUREAU COMMITTEE FOR ECONOMIC RESEARCH. Princeton, N.J.: Princeton University Press, 1956. Pp. x+417. $8.50.

For the purpose of assessing the current status of various antidepression economic policies, the National Bureau of Economic Research held two conferences in Princeton, New Jersey, one in October, 1953, the other in May, 1954. Papers on the broader aspects of control were contributed by R. Gordon, B. Caplan, and K. Boulding. In addition, D. Lusher, J. Pechman, R. Goode, L. Grebler, W. Owen, I. Merriam, R. Roosa, K. Fox, C. Heer, D. Johnson, and R. Triffin presented papers which examined the stabilization potentialities in farm price supports, state and local finance, public works, income taxes, social security, housing, and international commodity and currency developments. Comments on the papers by still other economists have been included and H. Stein has summed up some of the results in an Introduction.

The volume adds considerably to our knowledge of the contribution of different policies to economic stabilization. It is brought out clearly that built-in stabilizers can cope successfully only with minor cycles which are largely inventory and are undergirded by strong investment forces. A second point of emphasis is that administrative machinery and plans are not generally available to deal with the problems of more severe depressions when changes in tax rates or exemptions, stabilization of state and local expenditures, and large-scale public works expenditures may be required.

In the space remaining only highlights of selected papers can be presented. Gordon classifies business cycles as *minor* (largely inventory), *hybrid* (other investment declines as well but long-term investment incentives remain strong), and *major* ("long-term investment opportunities become seriously impaired," p. 11). These classifications are helpful in describing historical cycles. They seem less useful for forecasting and policy-making because of the uncertainties which are encountered in making an early identification of the type of cycle.

Disaggregation of major economic variables also appears to be indispensable for policy purposes. Boulding is particularly critical of aggregative models which fail to isolate important structural changes in the economy.

One conclusion from Caplan's examination of the 1948–49 recession is that "on the whole, we have not really been able to develop any satisfactory short-run policies other than our built-in stabilizers" (p. 52). Lusher's elegant model shows that automatic budget flexibility will hold a decline in gross national product to 30–40 per cent less than if taxes and expenditures declined in proportion to the decline in gross national product. Holland rightly suggests, however, that the contribution of a particular tax to stabilization is better shown by the absolute amount of its change rather than its greater than proportional change compared with any decline in national spending. Pechman, in his study of personal income taxes, concludes that to offset even "one-quarter to one-third of a large drop in incomes from 1953 levels would require substantial changes in rates and exemptions" (p. 142). Goode asserts that rapid amortization is likely to have more influence on investment than a general reduction in corporate taxes.

Finally, Fox uses input-output data to demonstrate that $6 billion (or 8 per cent) of an assumed decline of $75 billion in gross national product might be offset by agricultural price supports. Bonnen points out, however, that *real* disposable income would actually be lower because farm supports raise consumers' prices.

Although no blueprints are presented, policy-makers should welcome the useful information and analysis in these papers. They provide further evidence that automatic stabilizers are not adequate to overcome serious depressions.

KENNETH D. ROOSE

Oberlin College

Public Finance

Fiscal Policy: Its Techniques and Institutional Setting. By JAMES A. MAXWELL. New York: Henry Holt, 1955. Pp. vi+218. $2.90.

After a generation of economists here and abroad has explored the potentialities of fiscal policy, a systematic treatment of the subject will be welcomed by many. Such an undertaking presupposes, of course, a writer of vision and of unusual ability to integrate theorems and postulates of different schools of thought. Professor James A. Maxwell's ambition went even beyond a systematization of the controversial topic. He has tried to present it in an elementary fashion understandable to the newcomer in the field. He simplified his task, however, by abandoning one after another provinces of the large empire generally claimed by the fiscal theorist. He has so narrowly circumscribed his field of interest that some readers may wonder whether it is not too pretentious to call a study of this limited area a book on fiscal policy.

For instance the book makes no positive contribution to the timely problem of economic growth. Apparently, the author could not make up his mind and thus left it to the reader to decide whether to side with the prophets of secular stagnation or with the school of "secular exhilaration." Therefore fiscal policy as he sees it is confined to the role of counter-cyclical policies.

Again, the author did not resolve to cover the entire range of those problems. According to him, fiscal analysis should not aim to "keep the economy on an even keel," but rather to "hold swings within bounds." Such a cautious attitude, he thinks, is indicated because knowledge and techniques are inadequate to do anything more.

Still the reader should not expect to receive from our author a complete treatment of all aspects involved. Despite the interdependence of fiscal and monetary policies, Maxwell does not touch upon problems of monetary control. He excludes also the vital field of debt management. Even the compensatory functions of public expenditures and taxation have been approached with obvious diffidence. Built-in flexibility means more to this author than discretionary fiscal action. Business fluctuations, he trusts, can be held within reasonable bounds by an automatic process resulting in deficits during depressions and in surpluses during periods of prosperity. "Automatic stabilizers in the fiscal system are needed as shock absorbers, supplemented by discretionary fiscal policy action via government expenditures and tax rates to halt both inflation and recession" (p. 35).

Finally, a pervading absence of economic analysis should be noted. Although the subtitle indicates that particular attention is to be given to the techniques and to the institutional setting of fiscal policy, there would have been ample opportunity for appraising some of the most important current economic theorems.

If we disregard its lack of comprehensiveness the book can be said to offer

some useful information for an unsophisticated reader. There are well-rounded chapters on budgetary balance, and on the Council of Economic Advisors and the Joint Committee of the Economic Report. Built-in flexibility of social security and public assistance, of public works, of agricultural price supports, and of the corporation income tax is discussed in detail with many pertinent remarks, for instance, on perverse counter-cyclical effects of those fiscal instruments.

In general the views expressed in this volume are conspicuous for moderation and self-restraint. Although the author willy-nilly agrees on a series of fiscal measures as balancing factors, he warns against using them too much and too soon. Certainly he is right in insisting that the well-known blunders in the forecasts of competent economists should prevent any overconfidence in fiscal planning. Nor can there be any doubt that, as he states, the weight of most fiscal policy action is unknown and may never be precisely known. We may question, however, whether fiscal policy should never be used to eliminate maladjustments of prices, costs, and profits, and whether positive action should be delayed until a time when the events show clearly where we stand—even at the risk that the action may come too late.

FRITZ KARL MANN

American University

Housing Taxation. By WALTER A. MORTON. Madison, Wis.: University of Wisconsin Press, 1955. Pp. x+262. $4.75.

Arguments about the merits and the effects of the general property tax have been an important part of economic literature for many years, but few attempts have been made to quantify these arguments and relate them to actual market happenings. Morton has attempted this and concludes that, as has been generally suspected, real property taxes are both regressive and repressive, and alternatives to them should be sought if strong housing markets are to be maintained. His analyses and findings contain both new and old materials which will be of interest to economists and others who are interested in problems of housing, taxation, and public finance.

The majority of the data used in substantiating his conclusions is old (which Morton recognizes) and sometimes relates only to Wisconsin. For this reason the volume would be more appropriately titled as "Housing Taxation in the State of Wisconsin, 1932–40, with Some Applications to Problems of Housing Taxation in the United States." His analyses and reasoning are sound but his failure to use more recent data and his willingness to proceed to significant generalizations from data which are not only dated but also limited in representativeness weaken the force of his arguments.

Morton estimates that property taxes equal 25 per cent of total annual housing costs. Many of his arguments in later chapters are based on these estimates; yet his cost generalizations are particularly weak because of his failure to consider recent housing purchase and operating costs, current property taxes, factors which influence land values, and the demand for housing. For instance, in the first chapter he suggests that reductions in taxes reduce the charges against economic rent and so increase land values. This would be true only in a stable or rising market for the particular parcel involved; furthermore, value increase is basically a function of the market relating to locational rather than tax considerations.

Morton believes that lowering property taxes would increase the demand for housing and that a more equitable distribution of taxes would provide an increased incentive for private investment in housing. However, such recommendations probably would be acceptable only when real estate markets are faltering or general business conditions are depressed. The demand for housing is a function of: family size, financing available for the purchase of the home (not just the price of the home), and the stability and regularity of family income (not just the size of the income). The reduction or redistribution of the tax load would have little effect unless it were coincident with reductions in mortgage payments and costs of housing maintenance and operation.

The weaknesses of Morton's data also lead him to overstate the problem of the regressiveness of property taxes. For instance, he assumes that taxes have been an important reason for the reduction of the sizes of homes and bases this on the number of rooms in average dwellings. He fails to realize that the smaller home of today is a more efficient and comfortable place in which to live and provides more amenities for the average family than the comparably-priced barn-like home of earlier years. Current property tax assessment methods recognize size, quality of materials, and mechanical equipment, so that the proportional difference between taxes paid on a small home (with its limited mechanical equipment) and on a large home is relatively insignificant.

Morton's arguments about the repressiveness of the general property tax are equally suspect and for the same reason the representativeness and completeness of his data.

The best parts of the study are found in the later chapters where he compares the property tax with alternative types of taxes and urges that other methods of supporting local government be found so that the property tax may be reduced.

On the whole the study is interesting and provocative. His assumptions and generalizations with respect to the property tax are certain to create many comments. What he lacks in his appreciation of the principles of land economics he more than overcomes with the sophistication of his analyses and his understanding of the problems of public finance.

FRED E. CASE

University of California, Los Angeles

The Pennsylvania Tax Problem, 1955. By TAX INSTITUTE CONFERENCE. Princeton, N.J.: Tax Institute Inc., 1955. Pp. xxxix+212 (paper).

Encompassed in this volume are the papers presented at the conference on Pennsylvania taxation held at Harrisburg on April 5 and 6, 1955, under the auspices of Tax Institute, Inc., a national non-profit research and educational organization. Participants include government officials, educators, attorneys, accountants, and representatives of business and industry. Various facets of the budget and revenue situation in Pennsylvania are ably presented by Governor Leader, Professor Alfred G. Buehler, chairman of the Pennsylvania Tax Study Committee, and other qualified specialists. The impact of certain business taxes in effect in the state is discussed, the revenue systems of other selected states are described, and various possibilities for improvement in the Pennsylvania tax structure are considered.

The revenue problems of Pennsylvania are not unlike those of most of the

other states—an increasing scope and cost of needed services on the one hand, and, on the other, an inability or unwillingness to exploit traditional sources, thus necessitating a search for new sources. In this search, typically, the states are caught between the virtual pre-emption by the federal government of net income as a subject of taxation and the heavy reliance upon a general property tax—in most cases actually a real estate tax—by the local governments. In Pennsylvania, the situation is not completely typical and the problems not quite so difficult in that the property tax has not been unduly exploited. As an alternative, local governments have taken advantage of state authorization to employ various business, privilege, and excise taxes to meet local revenue needs.

Professor Buehler, in his paper, points out that the cost of government in Pennsylvania is moderate, comparatively (the state ranks twelfth in per capita state government taxes and in per capita state government expenditures among a group of fifteen industrial and commercial states), but that much heavier taxes nevertheless will be required. This seems evident from the fact that in spite of a doubling of general fund tax revenue between the bienniums of 1945–47 and 1953–55, the general fund appropriations have persistently outrun revenues by some 10 per cent. But already the comparative burden on corporations is high, the state ranking first in per capita rate among the fifteen states mentioned above. An increase in corporation taxes, therefore, would add to the competitive disadvantage which other participants indicate already faces industry within the state.

Alternative solutions suggested by Professor Buehler are to shift more of the burden of services to the local governments, particularly education, which accounts for about half of the current general fund appropriations, or to seek increased revenues, the most promising subjects of new taxes being real estate and personal incomes.

Governor Leader, in his budget message, after first pointing out the state's need for more than half a billion dollars of new revenue for the 1955–57 biennium, recommends a new classified income tax to produce about 80 per cent of this amount, an increase of 1 per cent (from 5 to 6 per cent) in the corporation net income tax to produce an added 10 per cent, the balance to come from a group of minor increases in existing excise taxes and a few new ones. Included in the requirements to be met from new sources is some $80,000,000 previously derived from a sales tax which is about to expire and which the governor recommends be not renewed.

In summary, the issues as they exist in Pennsylvania (or for that matter in any state whose economy leans heavily on industry) are well stated and alternative solutions are thoroughly aired. Professor Russell H. Mack expresses it well when he states that urgency forces consideration of taxes normally not desirable because of their regressive or otherwise inequitable character. Thus, a little fiscal "sin" is not too serious if it produces the needed revenue. In fact, a series of inequities are frequently regarded as roughly balancing each other.

The volume itself is well designed for easy reading or reference, with each discussion concisely summarized on a single page in the introductory section.

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BOOKS RECEIVED

BERGH, LOUIS O., and CONYNGTON, THOMAS. *Business Law.* 5th ed.; New York: Ronald Press, 1956. Pp. x+1,005. $7.00.

This standard textbook has been enlarged in scope by adding six entirely new chapters and has been brought up to date throughout in the new fifth edition. A teacher's manual containing solutions to the case problems is available.

BOK, DEREK C. *The First Three Years of the Schuman Plan.* ("Princeton Studies in International Finance," No. 5.) Princeon, N.J.: Princeton University Press, 1955. Pp. 79. $0.25 (paper).

Among other things, this study illuminates the tangle of arguments that have been interchanged on the proper steps toward greater unity in the European Coal and Steel Community, and, indeed, on the very desirability of integration itself.

COCHRANE, WILLARD W., and BELL, CAROLYN SHAW. *The Economics of Consumption: Economics of Decision Making in the Household.* New York: McGraw-Hill, 1956. Pp. viii+481. $6.50.

In this new text the authors concentrate on developing an understanding of the decision-making processes in consumption rather than on providing information for use in such decision-making.

DIAZ-LLANOS, RAFAEL. *Sintesis de la economía de Canarias.* Madrid, Spain: Consejo Superior de Investigaciones Científicas, 1953. Pp. 764.

Each important aspect of the economy of the Canary Islands is treated in a most thorough manner in this volume, which is profusely illustrated with maps, charts, and photographs, and presents several hundred pages of detailed statistical data.

GIDDENS, PAUL H. *Standard Oil Company (Indiana): Oil Pioneer of the Middle West.* New York: Appleton-Century-Crofts, 1955. Pp. xviii+741. $7.50.

The story of the largest marketer of petroleum products in the Middle West, and the fourth largest industrial corporation in the United States, is fully documented in this study by a historian.

HAUSER, PHILIP M., and LEONARD, WILLIAM R. (eds.). *Government Statistics for Business Use.* 2d ed.; New York: Wiley, 1956. Pp. xx+440. $8.50.

All the chapters have been rewritten for this new edition, and two new chapters—on "International Statistics" and "Some Uses of Sampling and Sampling Aids"—have been added. The content and purposes of the main series of federal statistics are described, and their applications to the practical decisions required of businessmen and investors are indicated.

HUMMEL, PAUL M., and SEEBECK, CHARLES L., JR. *Mathematics of Finance.* 2d ed.; New York: McGraw-Hill, 1956. Pp. xi+372. $4.75.

In this new edition the authors have rewritten the chapter on life insurance, enlarged the discussions on compound interest and general perpetuities, and revised the illustrative examples and lists of problems.

MAURER, HERRYMON. *Great Enterprise: Growth and Behavior of the Big Corporation.* New York: Macmillan, 1955. Pp. x+303. $5.00.

The author, with the assistance of *Fortune* magazine's research facilities, attempts to present the "inside story" of the growth and operation of fifty leading corporations.

NATIONAL MANPOWER COUNCIL. *Improving the Work Skills of the Nation.* New York: Columbia University Press, 1955. Pp. x+203. $3.50 (cloth); $2.25 (paper).

This report of the proceedings of a conference on skilled manpower considers how three important institutions—the secondary schools, industry, and the community—can contribute to the improvement of the nation's work skills.

PEACOCK, ALAN T., and OTHERS (eds.). *International Economic Papers,* No. 5. New York: Macmillan, 1955. Pp. 199. $3.50 (boards).

Of the ten papers presented in this volume, three may be of special interest to students of finance: "The Swedish Discussion on the Aims of Monetary Policy," "The Meaning and Use of Liquidity Curves in Keynesian Interest Theory," and "National Income Accounts as a Means of Currency Analysis."

ROBERTSON, ROSS M. *History of the American Economy.* New York: Harcourt Brace, 1955. Pp. xiv+593. $5.75.

This excellent new text places much more emphasis on economic principles and on the concept of economic interdependence than is customary in economic histories. It should be especially valuable to beginning students in economics and business.

SELTZER, LAWRENCE H. *Interest as a Source of Personal Income and Tax Revenue.* New York: National Bureau of Economic Research, 1955. Pp. 82. $1.25 (paper).

In recent years interest has averaged only about 2.8 per cent of total income receipts, and the lower taxable income groups have received a surprisingly large proportion of the aggregate interest income reported on taxable individual returns (41 per cent of the total is accounted for by individuals with incomes under $5,000).

TUTTLE, ROBERT E., and BROWN, C. A. *Writing Useful Reports: Principles and Applications.* New York: Appleton-Century-Crofts, 1956. Pp. xiv+635. $4.50.

The authors' approach is based upon both academic and business experience, and the result is a volume which is much more than a style book or a treatise concerned primarily with fundamental composition.

UNITED NATIONS. *Economic Survey of Asia and the Far East, 1955.* Bangkok: United Nations, 1956; distributed by Columbia University Press. Pp. xvi+235. $2.50 (paper).

This ninth annual survey reports on the current regional situation and then gives an analysis of recent economic developments in individual countries of the region.

UNITED NATIONS DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS. *Statistical Yearbook, 1955*. New York: United Nations, 1956; distributed by Columbia University Press. Pp. 644. $7.50 (cloth); $6.00 (paper).

Some 148 countries or territories have supplied information directly by means of a questionnaire for the seventh annual issue of this valuable reference work.

UNITED NATIONS DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS. *Yearbook of International Trade Statistics, 1954*. New York: United Nations, 1955; distributed by Columbia University Press. Pp. 556. $5.00 (paper).

This fifth issue of the *Yearbook* shows detailed annual statistics for 100 countries (as against 90 in the fourth issue), covering in 1954 about 98 per cent of world trade.

WU, YUAN-LI. *An Economic Survey of Communist China*. New York: Bookman Associates, 1956. Pp. x+566. $12.50.

This extremely well-written and closely documented study of the major economic policies and undertakings of the Chinese Communists since their seizure of power in 1949 makes clear both their strengths and their weaknesses.

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